



THE MARINE REVIEW



VOL. 51

NEW YORK

FEBRUARY, 1921

CLEVELAND

No. 2

Ready For The Yellow Ticket

Prompt Action in Removing American Shipping from Shipping Board Control Offers Best Chance of Salvage

MARINE affairs in the United States have reached the crisis. As with a patient, enfeebled by a long period of wasting illness, the critical point of the fever finds the friends standing at the bedside convinced of a fatal relapse and merely hoping for a favorable outcome.

Speaking of marine affairs as managed by the shipping board in the two years since the armistice, a fever-ridden patient is the logical symbol. These two years have been marked by what, based on results, stands out as a feverish attempt to wreck a permanent American merchant marine.

The kind of information which the shipping board has given the taxpayers in explanation of the disposal of the billions of dollars appropriated for the board is shown by the attitude of congressmen toward the board's last annual report.

Reports Compiled by Sea Lawyer

One representative found it necessary to present a resolution asking for information which would inform rather than confuse. He searched like all others interested in the tremendously important marine question, for indications of how the board was operating its numerically powerful fleet; whether it was making a profit or, a question which is more sensible, just how great the deficit was; how many ships were idle—idle as far as freight moving is concerned, but in active operation as far as the continued drain on the public treasury is involved.

Advocates of ship subsidies never dared to think even in their most extravagant moments of the sum which the country now is paying to support its huge but inefficient government fleet. A few millions of dollars a year was the figure set by marine men as the sum needed to equalize the handicaps faced by the privately owned ships in foreign trade before the war.

But E. T. Chamberlain, commissioner of navigation, officially informs congress that the sum now taken annually from the public treasury and handed

over to the shipping board for meeting fixed charges is \$375,000,000. Ten years ago all the maritime nations of the world contributed only \$50,000,000 in subsidies of all kinds.

The extravagance and inefficiency of the shipping board has been for months a Damoclean sword threatening every effort to translate the country's war inheritance of ships into a well-balanced, profit-making merchant marine.

One Man Has Sole Corrective Power

Supported since the armistice by renewed hopes of favorable developments always a few months away, the marine industry of America is depending today upon the intelligent foresight of Warren G. Harding.

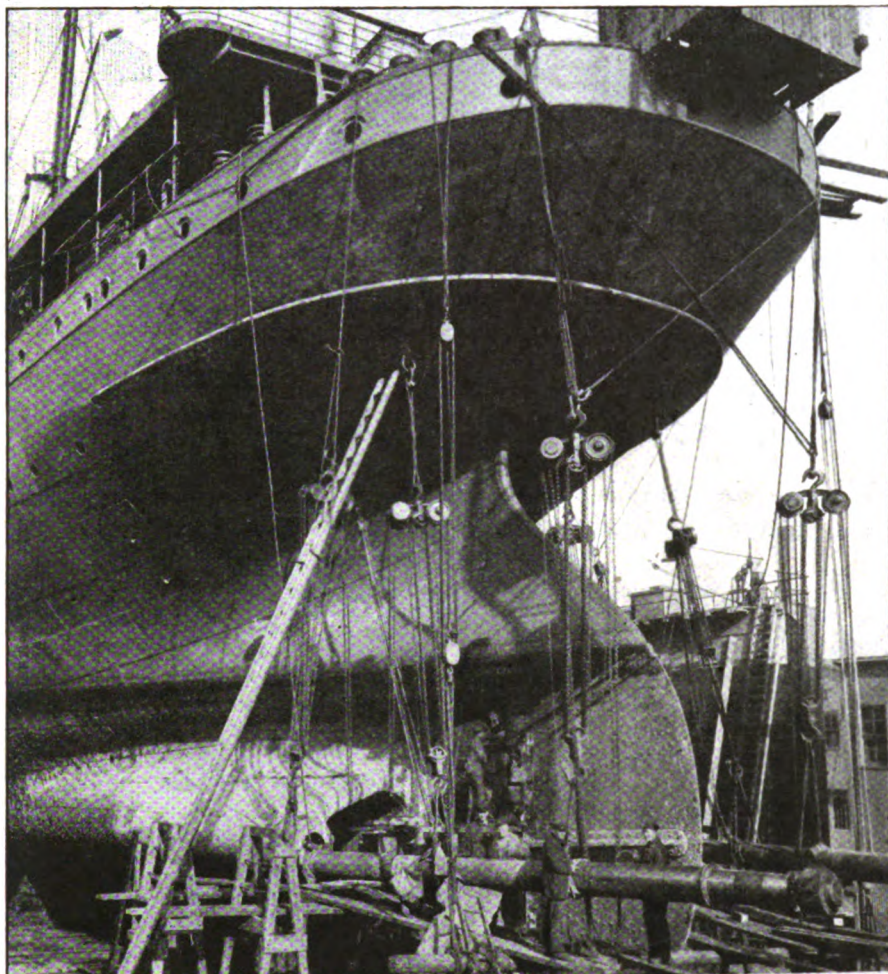
The new president has shown a soundness of judgment on marine subjects which supplies today the only beacon light to the uncharted harbor of refuge. His first campaign for the senate was based on a merchant marine platform in repudiation of the opposite position taken by Theodore Burton, then senator from Ohio. In every public speech of any importance, Mr. Harding has referred to the country's great need of a powerful, privately owned merchant marine.

An analysis of the new president's probable course after March 4, gained from his public and private comments, leads marine students to believe that he will do two things quickly. The most essential is his determination to eliminate the extravagance which has marked the shipping board and most other government departments with nearly fatal results to the country. The second is his decision to carry out the Jones law which has been a dead letter on account of the refusal by the executive department to carry out its clauses.

The shipping board must be turned out of office and its ships sold to private owners. To correct present conditions requires not a solution of rose water but of chloride of lime.

An Immigrant Ship, De Luxe

Former Prinz Eitel Frederick, After Unique Career, Appears In New Role — Robs "Steerage" Of Its Terrors

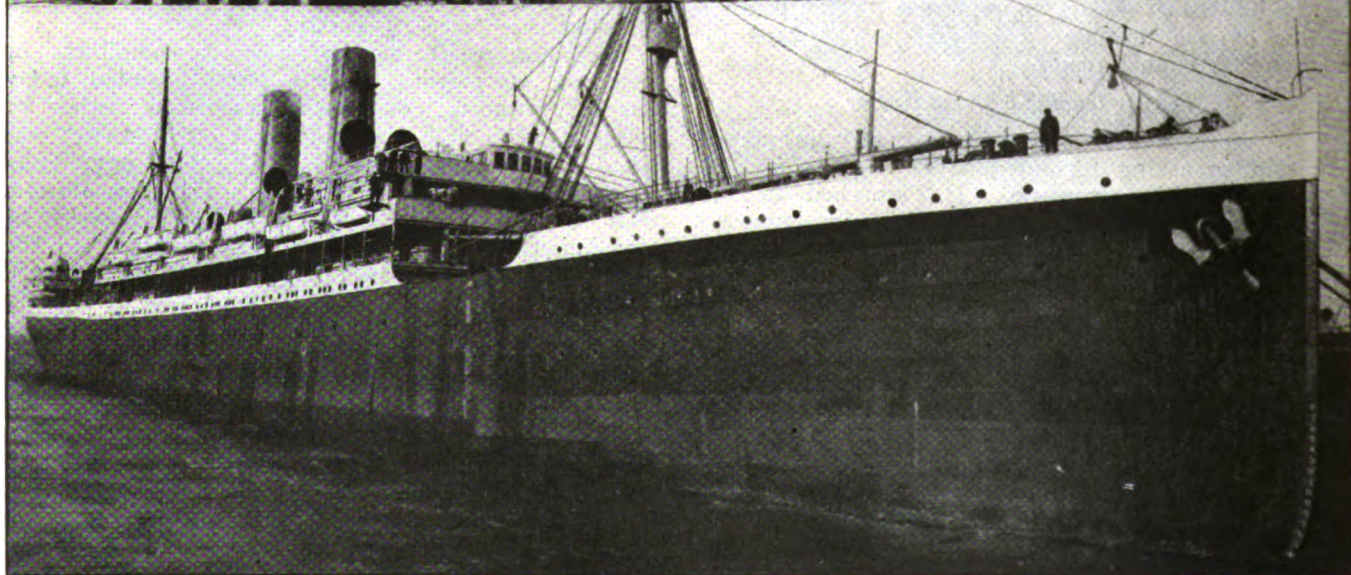


AMONG the most interesting passenger vessels sent out of American yards since the war is the MOUNT CLAY, known during the war as the DE KALB, which has been rebuilt in the yard of the Morse Dry Dock & Repair Co., Brooklyn.

In her day this boat, named PRINZ EITEL FREDERICK after a German prince, was the blue ribbon liner of the Atlantic, with a suite reserved for royalty and able to show her heels to any boat on the high seas. Later, as a commerce raider, she took a toll of more than 40 allied ships, before being driven into Newport News by English cruisers.

After the United States entered the conflict, the boat was seized and converted into a transport.

Now she appears as the MOUNT CLAY, in the role of an immigrant ship, under the ownership of the United American line, of New York. She will be used exclusively as a steerage passenger carrier and has been so equipped as to do away with the old conditions with which the word steerage has been associated.



FAMOUS GERMAN COMMERCE RAIDER CONVERTED TO AN IMMIGRANT SHIP

Conversion of the ex-German steamship DEKALB, which under the name of KRONPRINZ EITEL FREDERICK served as a commerce raider under the German flag during the early stages of the war, is one of the most interesting of recent shipyard operations. Driven into Hampton Roads by allied cruisers, seized by the United States when we entered the war, converted to a transport, grounded in the shoal waters of the Hudson river after being damaged by fire and now converted to a "third class" liner, this boat has had an exceptional career. Reconstruction involved a great amount of work. Even propeller shafts were removed for reconditioning, as shown in the upper illustration. A general view of the DEKALB entering the drydock for rebuilding, is shown in the lower view

American Owners Plan New Ships

Find Checks to Early Letting of Contracts — Steamship Companies Request Popular Support for Their Proposed Extensions

BY V. G. IDEN

IF THE desires of steamship owners and operators prevail, American shipyards will not lack orders for new tonnage. But these desires are naturally contingent upon many outside factors before they can reach fruition. It is a well known fact that most of the important steamship lines have plans ready for the construction of new tonnage, and many others will probably be led into drafting plans for extensions. Ship-owners declare these plans have been delayed and contracts have not been let prior to this largely because of the attitude of the shipbuilders themselves.

"The government has been holding the umbrella over the shipyards too much", was the comment of one important American steamship owner. "It is high time that more consideration is given the operator who is attempting to build up an ocean transportation system with his own money. The protective system given the American shipyards has not been conducive to bringing out orders for new tonnage. The steamship owners are not objecting so seriously to the measure of federal protection given the shipbuilder but they are claiming the right to equal protection for themselves."

The late war created a natural protection and subsidy to the American shipyard. The effect of that is just now passing. But before it had entirely passed congress enacted further protective features in the Jones act. It is in the interest of the American shipyard that the new law exempts a ship operator from the excess profits tax when he reinvests in new tonnage to be built in American yards. It is also in the interest of the shipbuilder that this same tax exemption is prohibited when a steamship operator attempts to purchase a vessel from the Emergency Fleet corporation.

These protective measures granted the American shipyard have so far operated to retard steamship owners placing orders for new tonnage. To encourage new construction it is necessary to encourage new American maritime ventures. American capital will

not invest on the high seas unless it is established beyond a doubt that the American nation is determined to maintain a merchant marine despite any cut-throat competition of foreign shipping. This, in substance, is the point of view at present of the American shipowners.

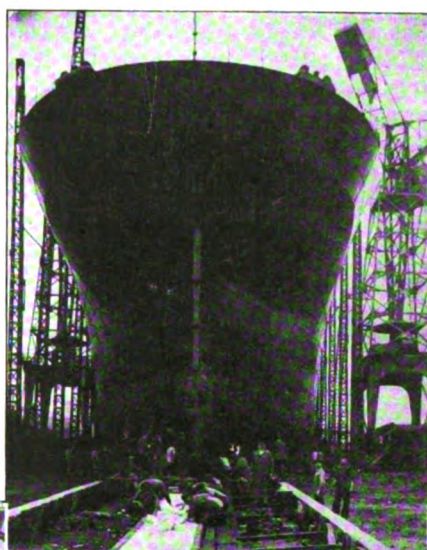
The protective measures enacted for the benefit of the shipyards have not brought any rapid or radical reduc-

ket it is impossible to estimate what new tonnage is actually worth. This is a disturbing element and steamship owners are determined to hold back their contracts until the situation is a little more settled.

A general reduction in the market price of textiles, foodstuffs and similar basic articles has been in progress for some time. On the other hand, the price of steel and shipbuilding material in general has been holding much firmer. Reductions in the price of these articles have been current but they have not been nearly so radical as the drop in other lines. Furthermore, there has been a general readjustment of labor going on quietly in domestic industries but no such readjustment has been in evidence in the wage scale in American shipyards.

American shipbuilders according to prospective shipowners, have been slow to realize that they cannot expect to do business much longer at the scale they maintained during the war. Costs must come down or the shipbuilding industry will go to another nation. That is what has been happening in England. British shipyard labor has been demanding and has been granted an 8-hour day. As a consequence, British labor will work ten hours in the shipyards and draw enough for the two hours of overtime to make it unnecessary for them to work continuously. On the other hand, shipyard labor in Antwerp has been working in three shifts a day and drawing only the basic day wage. Consequently, the cost of repair work in Antwerp is so much cheaper that the British yards have been losing contracts to the Antwerp firms.

Without making some such readjustments in American yards, it will be impossible to carry the industry along much further. This is a fact which is now being forced upon the attention of the American shipbuilder and there are signs that he is attempting to do something about it. Immediately after the armistice, the Atlantic Coast Shipbuilders' association was organized. One of the first things done was to affirm the



SHIP BUILT ON V-BOTTOM PLAN

The UNION, built of steel made in the United States was launched recently in the St. Nazaire yard of the Chantier St. Ateliers de St. Nazaire of Paris. It is a modern tanker, a number of improved features being embodied in its construction and equipment. Chief of these is the under body, which the illustrations show is of pronounced V-bottom type. In both the bow and stern views, the chine is plainly visible

tion in the cost of new tonnage and this at present is a most serious matter. With new tonnage abroad quoted at such low figures—it is rumored that a European ship might be bought for as little as \$60 a deadweight ton—it is not to be expected that American operators will consent to pay \$150 or \$200 a ton for similar ships built in American yards. But in the present mar-

Macy labor award and to maintain wages where they were during the heat of war. Now the shipyards find themselves in the position of dictating the wage scale in the localities where they are situated, for shipyard labor is better paid than labor in any other industry.

Recently, the clear impossibility of this situation has been brought to the attention of the shipbuilders' association and a movement has been set on foot to effect an equalization of the wage scale in shipyard localities as between shipbuilding and other industries.

Seek a Peacetime Basis

But apparently the movement made through association action to stabilize conditions has also operated to prevent a readjustment of the industry to a peacetime basis. Some of the more astute shipbuilders have recognized this. Already the Baltimore Dry Dock & Ship Building Co. is operating its yard independently upon the open shop principle. It is reported in reliable quarters that other shipyards are planning to take similar action. This is a movement in the right direction as it restores active competition between shipyards and will set in motion the necessary readjustment of the industry.

These are movements now on foot in the shipbuilding industry concerning which American shipbuilders are reluctant to talk. Nevertheless, they are movements which the steamship owners have been watching with considerable concern. These steps are in the right direction but require the backing of a sincere desire to build up a large American merchant marine.

A prominent official in the shipping field has recently described the period through which the shipbuilders have come as a "financial spree". He was willing to excuse them for any lax methods during the war but held that time should not be wasted in recuperating. All the protective measures incorporated in the Jones act cannot aid the American shipbuilding industry as much as the correction of its war inherited handicaps. Legislative foresight now is needed for the shipowner who is not going to buy the product of the yards unless assured of a means of making his profits out of the operation of ships.

The year 1921 ushers in a reduction in the price of plates and shipbuilding material. With this drop in the cost of materials, some of the repair yards have reduced the charge for repair work. This movement early became discernible in the port of New York and its effect naturally was good. Antwerp schedules have had

their effect. Steamship owners are interested as repair costs have an important bearing upon the cost of operating ships. It is not only a question of the money spent directly for repairs, but that cost also has a bearing upon the cost of insuring a vessel. Insurance of course, is a vital element in the cost of steamship operation. Repair costs will, it is felt, come much lower when labor and materials are readjusted to the new peace conditions.

These are rather blunt statements but they are based upon interviews had with many steamship men and the merits of any summary of such interviews is found only in the frankness of the statements. Too frequently, the shipbuilding outlook has been discussed from the point of view of the shipbuilders, although the builder benefits most by obtaining the opinion of his prospective customers. Shipbuilding prosperity depends upon the prosperity of the steamship companies. If natural economic law is to be applied, this fact cannot be escaped. The market for charters during the last half of 1920 was at a low ebb. So long as that condition lasted the steamship owner could recognize no merit in buying new tonnage and was unwilling to meet the high prices prevailing.

The American merchant marine today includes over 16,000,000 gross tons of shipping, this embracing tonnage engaged in the coastwise as well as the overseas trades. This is a little over double the merchant marine, domestic and overseas, at the outbreak of the war in 1914. On first thought it would appear from this that the world's marine has been over-tonnaged by the increase in American shipping, but such is not the case. During this time, the German and Austrian merchant marines have been wiped out practically and the British merchant marine reduced by acts of war.

Status Is Changed

The tonnage supply today is upon a parity with the supply before the war, but the demand for tonnage has materially changed. Prior to the war, the merchant marines of the world were coal-burning. War construction has changed a large proportion to oil-burners. Prior to the war, a considerable number of ships were required to transport bunker coal to bunker stations over the world. Today that requirement is not nearly so large. The change from coal to oil-burning has increased the demand for tanker tonnage and reduced the requirement for cargo tonnage. This has, in a measure, aggravated the

period of readjustment and brought a measure of uncertainty to the business of floating freight.

And it must further be remembered that during the period from 1914 to 1920, the American foreign trading tonnage has increased from something like 1,700,000 gross tons to approximately 11,000,000 gross tons. During these six years the United States has grown from a minor maritime nation to one of importance second only to England. It has naturally been a tremendous task to find American operators sufficient and capable of managing this vastly increased fleet with profit to themselves and to this country. The growth has been so rapid that it is but natural a pause must be taken to draw a breath. But with the floating property already in our possession as a groundwork upon which to proceed, further developments are in order.

Plan Big Ship Program

Among the most noted extensions in the American merchant marine are the plans of the International Mercantile Marine Corp. and of the United American Lines Inc. Inasmuch as the International Mercantile Marine owns a number of British subsidiaries, its plans for extensions are tied up, in a measure with the plans of the British merchant marine. The British subsidiaries planned last year to build at least eight new passenger ships. That program has been cut to two ships of medium size. These two are now building. It was at first planned to construct a new 40,000-ton passenger ship for the White Star line, but that plan has been abandoned. For the American line, the International Mercantile Marine plans to build two and possibly three large American passenger vessels. These will measure from 16,000 to 20,000 tons each. This program was announced a few months back and it is understood bids will be asked just as soon as shipbuilding costs reach a firm level. Plans for this line also hinge upon the policies to be adopted by the new shipping board.

It has long been the expectation in shipping circles that the line will ultimately be allocated the giant LEVIATHAN, although the American line is no longer so desirous of having her. These large ships, under present day operating costs, are far from profitable and are used largely for their advertising value.

The United States Mail line will attempt to make headway first with enemy tonnage which it has agreed to take over from the shipping board. This line will also operate in the

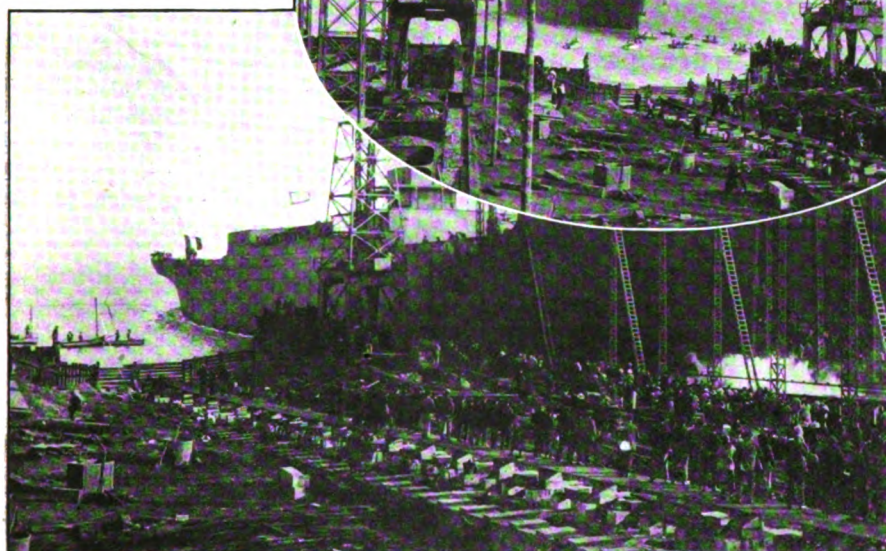
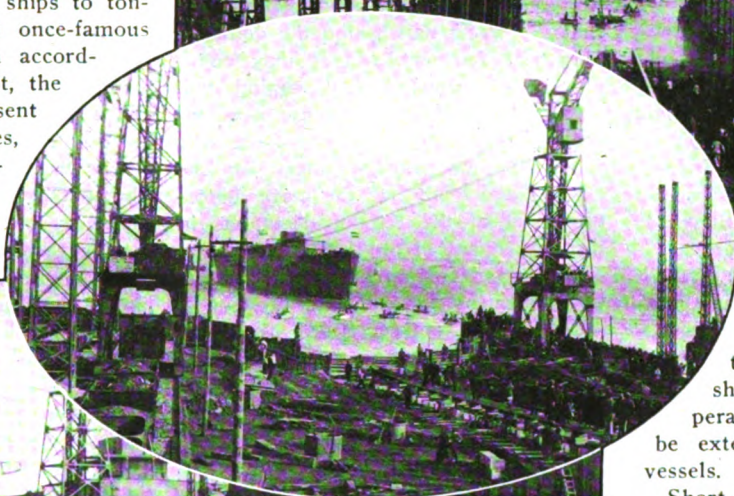
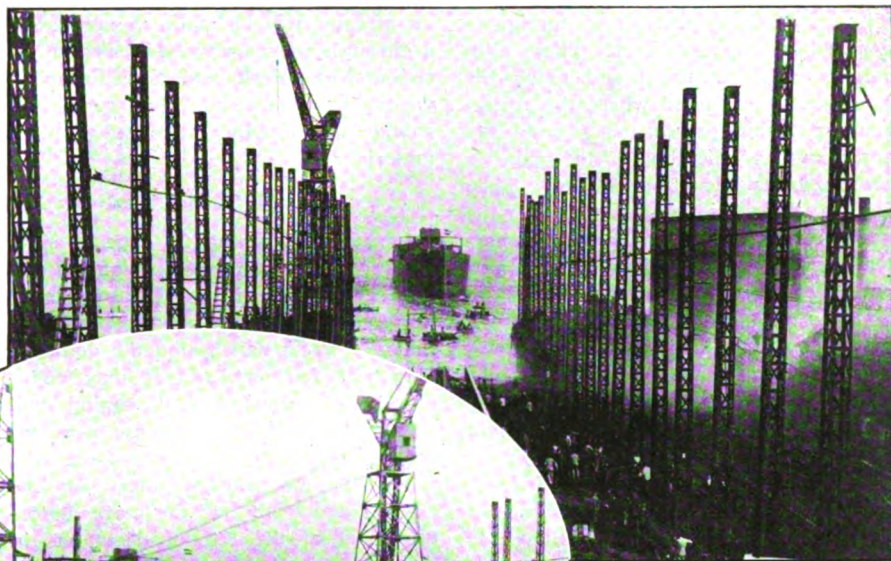
London service three of the new passenger boats built by the government. This company is not known to have any building plans, although it will have much work to let on account of reconditioning the old German and Austrian vessels.

On the other hand, the United American lines, organized by A. W. Harriman, has plans for services so extensive that it is almost compelled to have new ships built at the first opportune moment. This line has already announced its intention to have built two large cargo vessels to be equipped with diesel engines. While it is presumed that these are to be operated out of New York to far eastern ports, the diesel engine experiment is expected to pave the way for this line's developments on the Atlantic as well.

The United American lines has entered into an agency agreement with the old Hamburg-American line and it is relied upon to supply ships to tonnage the routes of this once-famous steamship company. In accordance with that agreement, the German line has already sent ships to American shores, and the Harriman organization is reputed to be looking around eager-

mer, that all the available lines are planning to take advantage of it. The immigration movement threatens to load every available westbound transatlantic steamer in the third-class quarters. In anticipation of this movement, the United American has already planned to rebuild some large cargo boats for an exclusive third-class service. The question is involved by the threat of congress to suspend all immigration for a period of two years.

when it gets to work in Washington. Others are more serious. Immigration restrictions would undoubtedly halt some of the present plans for the development of the transatlantic passenger service. But passenger services, in general, under the American flag will feel seriously the ruling of the department of justice that the prohibition law extends to American passenger ships. In passenger traffic it is necessary to compete with foreign vessels,



SHIP BUILT ABROAD WITH AMERICAN STEEL

That foreign countries are making strenuous efforts to regain their lost status in the matter of shipping is seen in the action of a French yard, which is building ships of steel purchased in the United States. The steamer, named *Union*, is a tanker of the latest type. It was built in the yard of Chantier et Ateliers de St. Nazaire and launched at its St. Nazaire yard. The illustrations show the character of this French yard. The steel was sold through the Smith-Eisemann Corp., New York

ly for American ships to place in service with them. The shipping board has indicated its willingness to allocate tonnage to the United American but it is not known whether any such allocations will include passenger ships and it is passenger ships which the Harriman organization must have.

So promising is the transatlantic passenger business for the next sum-

While many operators of steamships have shown a willingness to go ahead with their plans for the improvement of the merchant marine, checks have been thrown in their way at every turn. The many obstacles encountered by reason of the rulings and regulations of the shipping board are only too patent. Some of these will undoubtedly be changed by the new administration

and American shipowners want to grant oceangoing passengers all the accommodations offered by foreign-flag ships. Owners feel it is imperative that no prohibitions laws be extended to American passenger vessels.

Short-sighted policies of Washington have been checking the movement toward a privately owned marine. Government vessels were allocated to almost any operator who applied for the ships. It seemed but necessary for a man to show his interest in shipping and the board would allocate him a vessel. This plan has not worked out to advantage. For instance on an allocated ship, the government pays the expense of operation. The private operator merely collects a commission on the freight that is booked and risks not a dollar of his own money. Government vessels have been sent out on voyages without any preliminary accounting as to whether they would make a profit or break even. The result has been that voyage losses amounting to as high as \$75,000 to \$100,000 have been met by the shipping board. But while the government met the losses on these voyages, the operator collected his commission on the freight and did not have to forfeit a dollar.

It is impossible to operate privately owned vessels in competition with gov-

ernment vessels run upon such an unbusiness-like basis. So long as government vessels are allocated under such a system, private steamship men hesitate to risk a dollar in acquiring new tonnage which must compete with a governmental, subsidized marine. Rumblings of discontent among steamship men were in evidence last summer when the Belgian and the French lines broke away from the conference agreement and demanded the shipping board make some revision of its policies. But these protests of foreigners apparently have no effect. These allocations were continued and today the spectacle is presented where the American steamship owners as a body are appealing to the board to make a change in its allocation policies. They declare their willingness to take the government boats upon bare-boat charter, thereby putting the fleet upon a purely commercial competitive basis.

Under the bare-boat charter plan, privately owned ships would be upon more of a parity with government-subsidized ships. It would encourage the private ownership of vessels and would eliminate the inefficient operation of the tonnage. It would be an inducement to steamship lines to balance off their fleets and to go to the shipyards for new tonnage for this purpose.

The present slump in the freight market may be but a temporary matter awaiting a reorganization of industrial conditions throughout the world and a re-establishment of credit confidence. But in the interim, it is evident that a steamship man will not consider the purchase of a new vessel. The present and immediate past has been pessimistic enough. There is a ray of hope that in the future the administration of the shipping board will be along lines more closely related to accepted business practices. When that is brought about, shipping activities will be extended and these will be extended voluntarily by the private interests in the industry.

More Coastwise Ships Needed

Today, the coasting and shipping trades employ approximately 6,400,000 gross tons of shipping. This is about 400,000 gross tons less than was engaged in this same trade prior to the war in 1914. Extreme freight rates in the overseas trade during the war encouraged the withdrawal of many ships from the coasting trade. Rebuilding the coasting trade has been a slow business and it is in that direction American shipbuilders may expect some important business in the future.

Delay in rebuilding the coasting fleets has resulted from the fact that the rewards were limited by the rate making powers of the federal government

and the competitive influence of the railroads. Last year, however, the railroads were permitted to advance their rates, and with the gradual decline in overseas rates the rewards in coasting trades are rapidly becoming more important relatively. The Dollar and the Luckenbach lines have already re-embarked in the coasting business and some others may be expected in the near future. The Southern Pacific lines are planning some additions to their fleets. Reports are current that an attempt will be made to inaugurate a through passenger-vessel service between New York and San Francisco via the Panama canal. Free canal tolls would undoubtedly make these plans materialize.

Coastal Trade Vital

Coastal developments depend in a measure upon the resumption of domestic business in the United States. Conversely, better coastal communications by water will hasten the domestic industrial recovery and it may confidently be expected that capital will shortly be provided for these new undertakings. Many plans are under way to build new lake steamers on the Great Lakes. By far the more important part of the coastal fleets has in the past operated on the Great Lakes, but steady development of other coastwise business is expected.

The Jones act extended the protective coastwise laws to the Philippine islands under certain conditions. Exclusion of foreign tonnage in that trade would be a tremendous influence in establishing the American flag in the transpacific trades. But at the present moment the President is urging the granting of independence to the Philippines. Such an action on the part of congress would automatically prevent the extension of the coastwise laws to those islands. On the other hand, some Filipinos are displaying hostility to this extension of the coastwise laws. This unsettled condition constitutes another stumbling block to a broad development of the coastwise business and creates sufficient uncertainty to cause steamship operators to withhold their plans for development and await the announcement of a permanent policy on the part of the government.

The war forced neglect of the trade routes between the United States and the Latin-American countries. Before the war these trades had fallen into the hands of foreigners. Since, however, there has been a keen awakening as to the opportunities there and steamship companies are not backward in realizing their advantages. With the co-operation of the Munson line, the United States shipping board has in-

augurated an improved passenger service between New York and Buenos Aires. It is the confident expectation of all that this service will ultimately be entirely in private American hands. During the past year, the service has been so luxurious and expensive it has not paid, but it is usually necessary to spend large sums of money in developing a new line such as this.

The Grace line has also improved its services between New York and the west coast of South America running its excellent new steamers down as far as Valparaiso. Several less adventuresome lines have increased their services to ports in the Caribbean sea. According to plans reputed to be in mind, the Ward line will build some new combination passenger and freight boats for its improved services to Cuba and Mexico. With the establishment of a stable government in Mexico, the desire of steamship companies to improve these routes will be increased. It has also been said that the New York & Porto Rico line intends to build some passenger ships for the West Indies trade. The same is true of the Clyde and Mallory lines. The latter had a comprehensive plan for the increase of its fleets just prior to the war, but these plans have not as yet been carried out. While the plans are not believed to have been abandoned entirely they at least have been temporarily postponed awaiting a readjustment in the cost of shipbuilding. But the Clyde and the Porto Rico lines have been forced to make some extensive improvements on a few of their ships, the reconditioning going so far as to result in practically new vessels.

Liner Contracts Held Up

The Red D line some months back announced that it would build two new passenger vessels which would be placed in the Venezuelan run. Nothing has as yet been done toward starting work on these. It is believed, however, that the contracts will be let the minute shipbuilding conditions are stabilized and the federal government has adopted a permanent shipping policy. The Munson line, which operates to Cuba and other ports, plans a number of additions to its fleet. The Munson line operates freight boats to Cuba and now it wants passenger ships for the same trade. Last year, this line let a contract to the New York Shipbuilding Corp. for one such passenger vessel. It was planned to build two sister ships, but after opening bids it was decided to delay the letting of the contract for the second ship.

The extension of American service to ports on the northern coast of South America is certain to come.

(Concluded on Page 114)

New Liners For South America

**Munson Line To Have Two Altered Troopships
For Trade to Rio—Will Cut Run to 12 Days**

DURING the past year sincere efforts have been made by the shipping board to facilitate the bonds of communication between the United States and the large republics of South America. With the assistance of the Munson Steamship Co., a fleet of luxurious passenger vessels have been placed in service between New York and Rio de Janeiro and Buenos Aires. A somewhat inauspicious beginning was made with a reconditioned German boat, but that was immediately withdrawn and better steamers substituted.

Today, the Munson line is operating some of the finest steamers ever placed in service between these two continents. But the promoters of this line are not satisfied. By next spring some new vessels will be allocated for this service and the run between New York and Rio will be made within 12 days. These new vessels, the SEA GIRT and the AMERICAN LEGION, were originally planned as

transports for the government; but since the armistice architects have been busy at work and they are now being turned out as steamers of the first class with accommodations for both first and third class passengers.

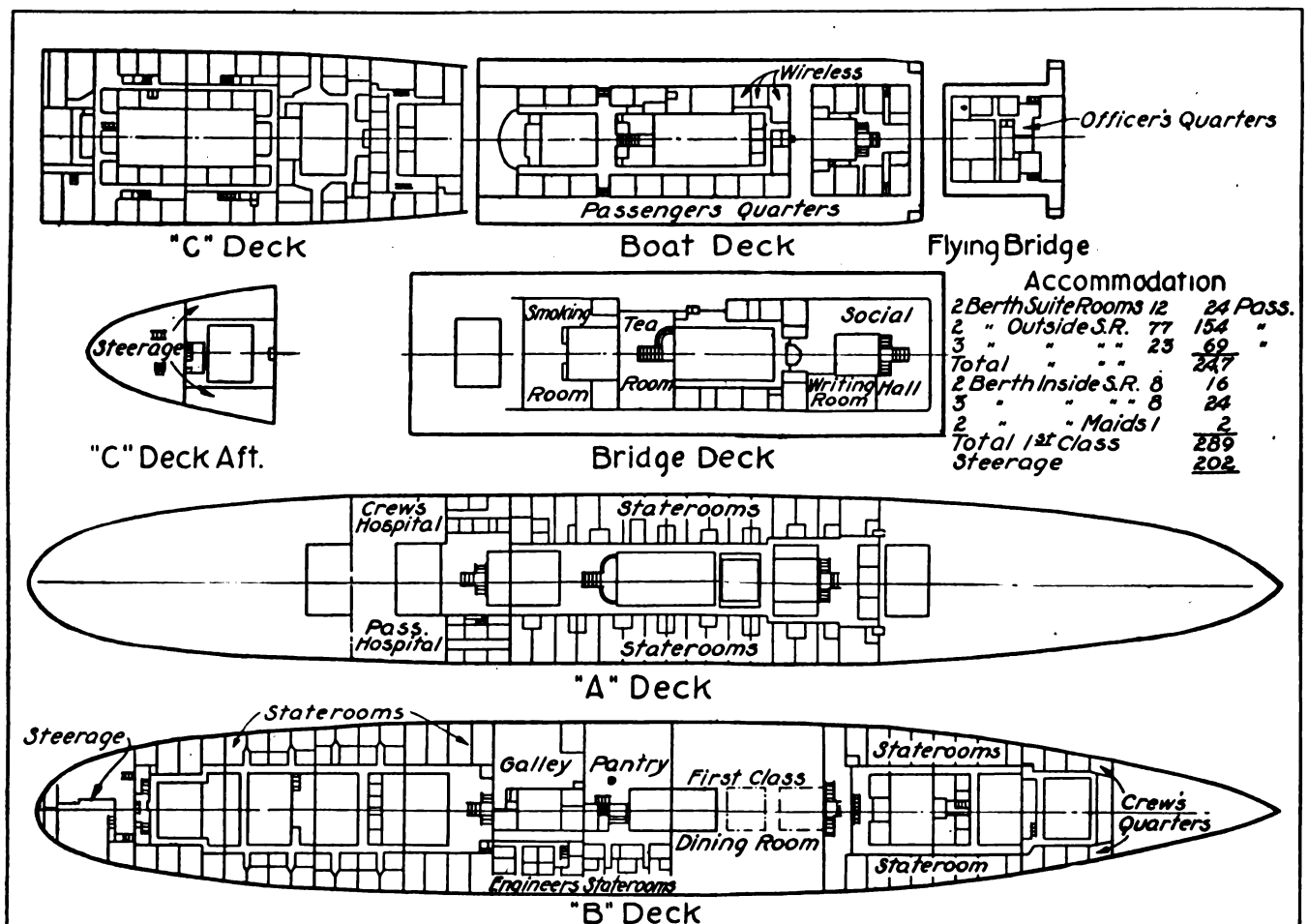
Boats are Sister Ships

The CALLAO, which has been operating in the South American run, has been temporarily withdrawn for repairs. The Munson line is at present operating only the HURON, MARTHA WASHINGTON and AEOLUS. The latter is the largest vessel ever run between New York and South America. The two new vessels, which have, for all practical purposes, been especially designed for the South American trade, will be available next spring. The SEA GIRT will be delivered either in March or April, and the AMERICAN LEGION will be ready soon thereafter. Beginning with next spring, the Munson line will be able to schedule fortnightly sailings

for ports of eastern South America.

The two new vessels are sister ships. They measure 535 feet in length, 72 feet in beam, and 50 feet in depth. Their displacement is 22,000 tons. They are oil-burning, equipped with turbine engines and water tube boilers. They are much better adapted to the South American trade than anything heretofore placed in this service, because they will be able to make 17½ knots, cutting down the run from New York to Rio to 12 days. Being oil-burning and equipped with large bunker space the ships will have a cruising radius of approximately, 10,000 miles. It will be possible for them to make the round trip from New York without refilling their bunkers. This is by no means a small matter, as neither coal nor oil is to be had at the South American stops, except at a prohibitive price.

The architects of the Munson line worked in conjunction with the architects of the Emergency Fleet Corp.



BIG TRANSPORT AS CONVERTED FOR SOUTH AMERICAN PASSENGER SERVICE

in making these vessels the best for the service. A number of novel ideals have been incorporated and special attention given to the comfort of the passengers to be carried. The ships were 85 per cent completed, when it was decided to allocate them to the Munson line for the South American run. At that time the New York Shipbuilding Co., Camden, N. J., the builder, was proceeding with the original contract with the government to supply transports. The structural plans of the ships were left unchanged. As a result both the vessels are equipped with special water-tight bulkheads and similar safety devices, which were originally planned to protect the carriage of troops during times of war.

Structures Not Altered

It was the plan to rearrange these ships for the passenger service without altering the structural design of the vessels and without incurring any more additional expense than necessary. Many important changes were made but it was necessary to practice economy as far as possible, especially inasmuch as the ships had already cost the government a very goodly sum, the contracts for them having been let under war conditions.

The exact cost of building these ships has not been officially announced; but according to report it was far in excess of anything that any private company would have spent for similar property.

The dining saloon has been moved down to B deck and one of the hatches, which formerly pierced this deck forward has been closed, giving more floor space for the first class diners. It has been possible, therefore, to increase the seating capacity of the dining saloon from 190 to 236 persons. The hatchway above this deck was redesigned into a ventilating trunk, it ending with a dome over the dining saloon on B deck.

The officers' quarters on the flying bridge were rearranged, and first class suites of luxurious design were placed on the boat deck. In some of the staterooms on the boat deck have been placed a permanent bed with a folding Pullman berth above.

Among the important changes made especially for the Munson line service to South America is the arrangement of the public halls on the bridge deck. Forward on this deck is the social hall and music room and aft a writing room. In the corridor is built a special candy counter. Amidships are some special staterooms and aft of these has been built a tea room. The smoking room and bar are on this deck. The rearrange-

ment effected by the Munson line has greatly added to the space allowed for public rooms, which, it is expected, will enhance the comfort of the passengers. The bridge deck is the promenade deck also an unusual amount of space having been given over for this.

Deck A has been given over entirely to staterooms and hospitals. The latter are two in number, one being for the passengers and one for the crew. The doctor's office and cabin are on this deck. The purser also will have his office on this deck. Deck B carries the dining saloon, galley, pantry, and more first class staterooms. In some of the staterooms on A deck will be placed a bed arranged to fold up into the wall during the day in addition to a permanent bed. The grand stairway is forward of the dining saloon on B deck and forward of this are more state rooms. The space aft on this deck has been fitted with additional first class staterooms. It was the original plan to use this space for second class quarters, but it was found impossible to make arrangements for a separate dining room. But the charge for these staterooms will be intermediate with privilege of dining with the other first-class passengers.

The first of the third-class quarters has been provided in the stern on B deck. Additional quarters for steerage passengers are provided on C deck below. In this space a steerage dining room has been provided by flushing over a hatch, and placing tables crosswise of that space.

As originally planned by the Emergency Fleet Corp. these vessels would have been capable of booking only approximately 150 passengers. As rearranged by the Munson line a total of 289 first class passengers will be carried. In addition, the ships will be capable of taking 202 passengers in the steerage.

Handle Millions in Cargo

The value of cargoes carried by the government-owned Mississippi river barge line, for the year ending Nov. 30, 1920, was \$51,000,000, according to figures just given out at the New Orleans office of the barge line. This included both raw materials and finished products. Thirty-seven per cent of the population of the United States inhabits territory served by this barge line, declare agents of the line in the Louisiana port.

The 430-foot tanker REAPER, built for the Texas Oil Co., recently was launched at Bath, Me. The new craft is of 6700 gross tons.

Launch Big Motorship in Record Time

What is believed to be a new peace time construction record for steel hulls has been established by the Todd Dry Dock & Construction Corp. at Tacoma, Wash., the 6500-ton steel motorship for the Alaska Steamship Co. rising from a vacant building berth in 45 days. This fractures all previously established records on the Pacific coast.

The keel for the KENNECOTT was laid on the building berth at noon Monday, Nov. 1. The same day the entire keel was laid down. Fabrication of this material was possible, while shipwrights were preparing the way. But aside from this small portion, no work was turned out from the shops in advance, as the keel was laid but several weeks after the letting of the contract. The Todd plant in Tacoma is the first on the Pacific coast to emerge with such a wonderful peace construction work since the emergency. The time attained on the KENNECOTT is the result of a shipbuilding organization built within the last three years.

Mrs. E. Tottan Stannard wife of the vice president of the Alaska Steamship Co. sponsored the KENNECOTT as the climax to a fitting launching program. The vessel is named after that section of Alaska where extensive mining operations are in progress and a section which she will visit frequently when placed in operation.

Transportation of steel from eastern manufacturers is the only handicap confronting Puget Sound builders. This they point out however, as not being of any great draw back because of the almost ideal weather conditions the year round. Evidence of the possibilities of the Todd-Tacoma yard is seen in the bids tendered the navy department on the 10,000-ton troopship announced recently, when it was found the Tacoma yard was more than one-million dollars under the nearest responsible bidder.

KENNECOTT is the thirtieth product of the Tacoma plant and will be placed in operation within the next few weeks. Records compiled by the builders show 2,300 tons of steel fabricated for the motorship during the course of construction, while 450,000 rivets (estimated) were driven. The vessel, when launched was nearly 90 per cent complete.

Because of high rail rates, copper from Montana consigned to New York is now moving through Seattle to be transported by water to the Atlantic coast. The first shipment consisted of 1000 tons. It is announced that this commodity hereafter will move in quantity by Pacific gateways.

New Cruiser Launched Bow First

West Coast Yard Departs From Usual Custom of
Sending Boat From Ways—Will Make 40 Miles

IN THE presence of a distinguished company, including Gov. Louis F. Hart and prominent navy and shipping men, the United States scout cruiser OMAHA was launched by the Todd Dry Dock & Construction Corp. at Tacoma, Wash., on the morning of Dec. 14. This vessel is the first of three of similar type building at the Tacoma yards. The others are expected to take the water in March and July next.

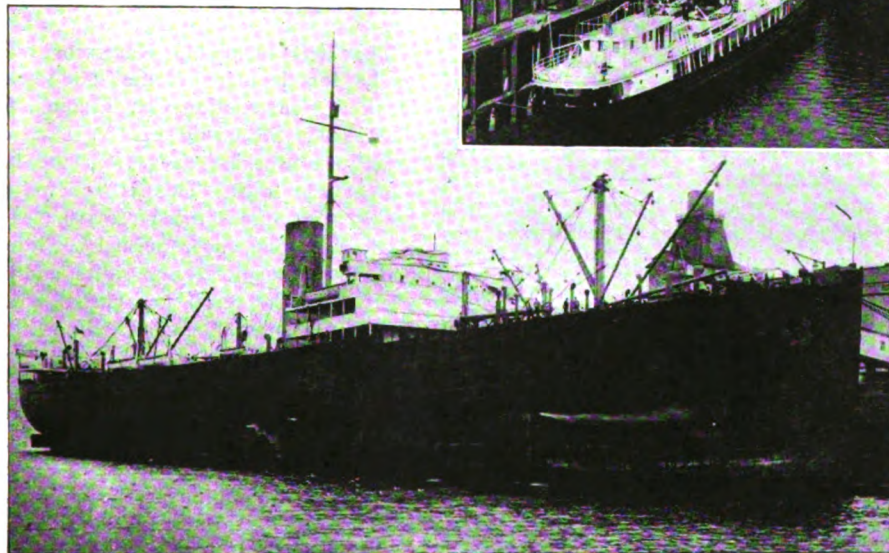
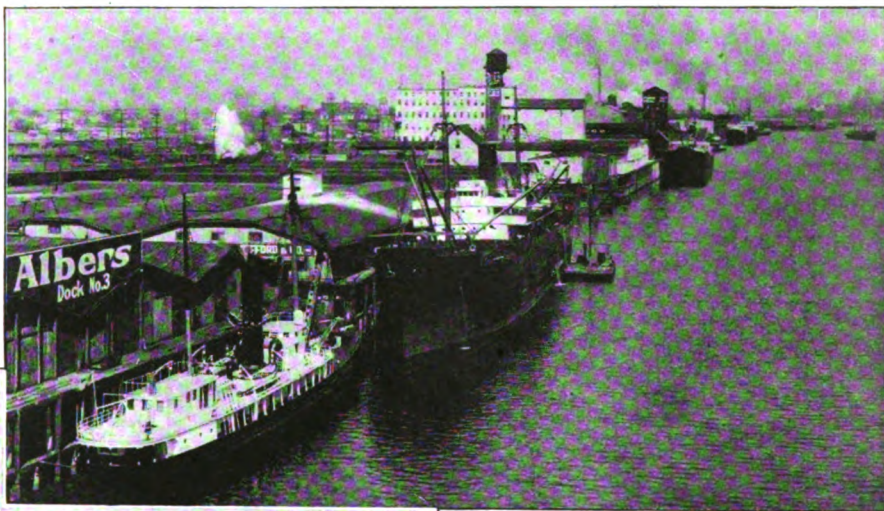
Sponsor of the OMAHA was Miss Louise Bushnell White, of Omaha, selected for the honor by Mayor Edward T. Smith of that city.

The advent of the OMAHA was noteworthy for several reasons. She is the longest vessel ever constructed at a yard in the Pacific Northwest; is the first craft of her type built for the navy in 15 years; also is the first vessel of her type and size in the history of shipbuilding to be sent into the water bow first. Notwithstanding this departure from established custom,

saving. The vessel has four shafts and four propellers. With the stern at the head of the slip, the work of installing the structure around the shaft openings, handling the large castings and boring out to receive the shafts was completed more economically and with no interference from the excessive rise and fall of tides. Also the moving of these heavy castings the length of the ship between the ways was obviated. Due to the fine lines of the hull the pressure on the launching

estimated speed is 35 knots. Steam for the turbines will be generated by 12 Yarrow water-tube boilers with working pressure of 265 pounds. Oil will be used for fuel.

The battery consists of twelve 6-inch high power rapid fire guns, two mounted in twin mounts on center line forward, two in twin mounts on center line aft, four in sponsons on forward end and four in sponsons on after end of superstructure on main deck, two 3-inch anti-aircraft, two 3-pounders and two ma-



Drawing 36 feet of water, the ORCA, a British freighter cleared the port of Portland, Oreg., late in December. This was the heaviest draft vessel ever entering the Columbia river. This boat could not enter or leave the Golden Gate at San Francisco, where the maximum depth of water is 33 feet. The ORCA carried out 15,000 tons of grain for Europe

The determined effort of Portland, Oreg., to build up a world trade has brought results in the past two years. Many steamships have been added to its foreign services. A glimpse of Portland's beautiful harbor is shown above

chine guns. Two twin torpedo tubes will be on the main deck aft.

The OMAHA was built to meet all the requirements of the United States navy and was originally contracted for by the Seattle Construction & Dry Dock Co., Seattle, in December, 1916. The keel was laid in Seattle in July, 1917. But in October of the same year, due to the need for merchant shipping at the time, an arrangement was made by the Emergency Fleet corporation and the navy department whereby the keel was lifted from the ways and they were devoted to the building of merchant ships. On the sale of the Seattle yard in June, 1918 the contract was transferred to the Todd Dry Dock & Construction Corp., Tacoma. The keel and all materials on hand were taken to Tacoma and the keel laid the second time in December, 1918. Since then the work has progressed satisfactorily and it is expected to deliver the ves-

the big steel hull glided into the waters of Commencement bay without the slightest hitch.

Explaining the reasons for the change in launching practice, Vice-President and General Manager J. A. Eves said:

"The launching of the OMAHA was not intended to upset the hard and fast rules laid down by shipbuilders, but to expedite construction and effect great

poppets and the cost of the cradle for launching was reduced 50 per cent."

The OMAHA is 550½ feet over all, 55 feet, 4 inches extreme beam with mean load draft of 13 feet 6 inches and displacement at that draft of 7100 tons. She is to be fitted with Westinghouse Parson's turbines and reduction-gear developing 105,000 horsepower driving four propellers, two on each side. Her

set late in 1921 well within the contract time.

The main propelling machinery for these scout cruisers is building at the plants of the Westinghouse Electric & Manufacturing Co., the turbines at the

Pittsburgh works and the reduction gears at the new South Philadelphia plant. Each cruiser is to have four sets of steam turbines working through reduction gears, each set developing 25,000 horsepower. Each set of turbines con-

sists of a combined cruising and high pressure turbine, a low pressure turbine and a reduction gear which reduces the speed of the turbines from over 2500 revolutions per minute to about 370 revolutions a minute for the propeller.

Coast Yards Promised Busy Year

BY R. C. HILL

FIRST of seven 12,000-ton tankers being built by the Northwest Bridge & Iron Co., Portland, for the Swiftsure Oil Co., the steamer *SWIFTSURE*, was successfully launched Dec. 15. She was christened by Mrs. Ward R. Bowles, wife of one of the directors of the Northwest corporation. Three ways are being used in the construction of the seven vessels and rapid progress is being made. Capt. George E. Bridgett, a veteran navigator of the Standard Oil Co., is supervising the work for the owners. The keel of the fourth steamer was laid immediately after the launching of the *SWIFTSURE*.

On Dec. 15 the 12,000-ton tank steamer *W. H. LIBBY* was launched at the yards of the G. M. Standifer Construction Co., Vancouver, Wash. Miss Madge Libby, daughter of a former official of the Standard Oil Co. acted as sponsor. The *LIBBY* is the second of three vessels of the same size and type the Vancouver plant is building for the Standard Oil Co. of New Jersey. The *JOHN WORTHINGTON*, first launched, has already entered service. The steamer *LIVINGSTONE ROE*, which will be the last tanker of this contract, will be launched in January. The same yard also has contracts for two 12,000-ton tankers for the Imperial Oil Co., of Toronto, a subsidiary of the Standard Oil Co.

The Seattle Contract Co. has purchased the material, equipment and buildings of the Ames Shipbuilding & Dry Dock Co., Seattle, and this fine yard shortly will be dismantled. It was assembled in 1916 and had a number of contracts from the Cunard company and Standard Oil Co., when the yard was commandeered. In a little more than two years the Ames plant completed 24 freighters of 8800-ton type and three tankers of 10,000 tons each.

G. F. Matthews, shipbuilder of Grays Harbor, Wash., has purchased a site on the Willamette river at Portland, where he will engage in wood shipbuilding. He is confident of a continued demand for wooden sailers and steam schooners for the Pacific lumber trade. Upon the completion of the schooner *UNDAUNTED*, he will remodel another wooden steamer into a sailing vessel. The steamer schooner *QUINAULT* has

been completed at the Matthews yards, Hoquiam, Wash.

The wooden barkentine *S. F. TOLMIE* has been launched at the plant of the Victoria, B. C. Shipowners', Ltd. The vessel was named in honor of the Canadian minister of agriculture. The *TOLMIE* is the first of four vessels of the same type and size being built with government aid. Their lumber capacity will be 1,700,000 feet and they will be used in Pacific trade. These vessels are unusual in that they are being constructed with forged steel knees instead of natural wood knees. The steel knees give more room in the holds adding about 100,000 feet to the capacity.

The Union Oil Co. is building three tankers at the plant of the Southwestern Shipbuilding Co., San Pedro for coastwise service. Two are of 12,000 tons and the third of 7500 tons. The new carriers will replace four of the older vessels now operating on this coast. The company has already sold the tanker *ARGYLL* to the Compagnie du Boleo, of Santa Rosalia, Mexico. The tankers *LANSING* and *WASHTENAW* and barges *SIMLA* and *ERSKINE M. PHELPS* also are to be sold. The *PHELPS* was for years the pride of the American merchant marine, built at Bath, Me., and known in all parts of the world as one of the smartest ships afloat. She was converted into a tank barge about six years ago.

Calls for Cost Reduction

The general depression in world trade and shipping is being reflected in the shipbuilding industry, according to G. M. Standifer, president of the G. M. Standifer Construction Co., Vancouver, Wash., who has returned from an eastern tour. Mr. Standifer says there is a surplus of tonnage and he does not view the future with particular enthusiasm, especially when the high wages paid at the Pacific yards are considered. "With the vessels built and those under construction," he said, "there is a surplus of bottoms at the present time. Yards throughout the world are either closing or curtailing output. When business improves to a point where there is a demand for existing and additional

tonnage, the Columbia river will participate in the new work. However, a readjustment of wages will be necessary. We are paying higher wages than any other shipbuilding area in the world."

Coal, cement and mining companies on the Pacific have been advised that Japan has a fleet of wooden hulls for sale at about 25 yen per ton, which is said to be one-twentieth of what was asked for them during the war. These vessels are idle in Japanese ports and are represented as being available for barges to carry heavy bulk cargoes.

The new steel steamer *CANADIAN HIGHLANDER*, built for the Dominion government by the Wallace Shipbuilding Co., Vancouver, B. C., has had her trials and has gone into service. This vessel is one of a large fleet being completed for the Canadian government for Australian and other overseas service.

The steel motorship *KENNECOTT* was ready for launch by the Todd Dry Dock & Construction Co., Tacoma, for the Alaska Steamship Co. on Dec. 30, exactly 45 working days from the laying of the keel. This is believed to be a peace-time speed record. The work was done under normal conditions and with straight 8-hour shifts and no overtime. The vessel was christened by Mrs. E. Tappan Stannard, wife of the vice president and general manager of the Alaska Steamship Co. The *KENNECOTT* is a splendidly built hull, testifying to the increased efficiency and output which has been accomplished by the Todd organization under the able management of President C. W. Wiley and Vice President J. A. Eves. At the last minute the launching was postponed until Jan. 6.

A bronze tablet, commemorative of her construction and first sailing date, has been presented by maritime interests of the Crescent City to the steamship *NEW ORLEANS*. She is the first of several 9600-ton steel steamers being built for the Emergency Fleet corporation by the Doullut & Williams Shipbuilding Co., New Orleans. She has been allocated to the J. H. W. Steele Co., New Orleans.

British Shipping Suffers a Slump

Raising of Government Control Fails as Panacea—Rates
Fall as Business Dwindles Under Economic Pressure

BY CUTHBERT MAUGHAN,
Shipping Editor, The Times, London

IN CASTING our minds back over the shipping developments of the past year we discover an example of what may be called Divine discontent. At the end of 1919 British shipowners were discontented because they still were troubled by some form or other of government control. They entered the new year with high hopes in view of a prospective grant of complete freedom to carry on their business as seemed fit to them.

That freedom became theirs during 1920. Yet it may be doubted if, as a body, owners have fared financially anything like as well since they have become their own masters. For instance, the British government rate for steamers to load maize in the River Plate for the United Kingdom in February of last year was 107 shillings 6 pence per ton. The government fixed rates of freight came to an end on July 15. Since then the freight quoted in the market has fallen fairly steadily and at the end of the year owners were willing to accept a freight of 40 shillings per ton.

Building Up Depleted Fleets

The government fixed rates of freight could not be maintained on the basis agreed early in the year, because in July when the rates were withdrawn owners, owing to the large supply of tonnage available, were willing to accept for merchants' business a freight less by £1 17s per ton than the government quotation. Grain was still being brought to the country by the wheat commission, and since this commission could secure tonnage, and plenty of it, at lower rates, there was nothing to be gained, but rather much to be lost, by the government in maintaining the fixed rates of freight.

But these questions of the grain freights mainly affect the ordinary cargo tonnage and it will be well to review briefly shipping in 1920 under the headings adopted in recent articles of this series, namely: (1) Passenger and mail liners; (2) cargo liners; and (3) ordinary cargo steamers, colloquially known as "tramps."

The opening of the year found the British liner companies with seriously depleted fleets. All their vessels had been requisitioned, and those which had been commissioned as merchant

cruisers, hospital ships and transports, had to be reconditioned. All such vessels had felt the strain of the war when their stay in port had been reduced to the absolute minimum and the last quarter of a knot had been got out of the engines. At the beginning of last year the British shipyards were inundated with reconditioning work and consequently vessels were returned very slowly. These ships have gradually been coming



CUTHBERT MAUGHAN
Recognized authority on English and international
shipping and shipbuilding

back into service during the past 12 months. Some have not even yet left the shipyards.

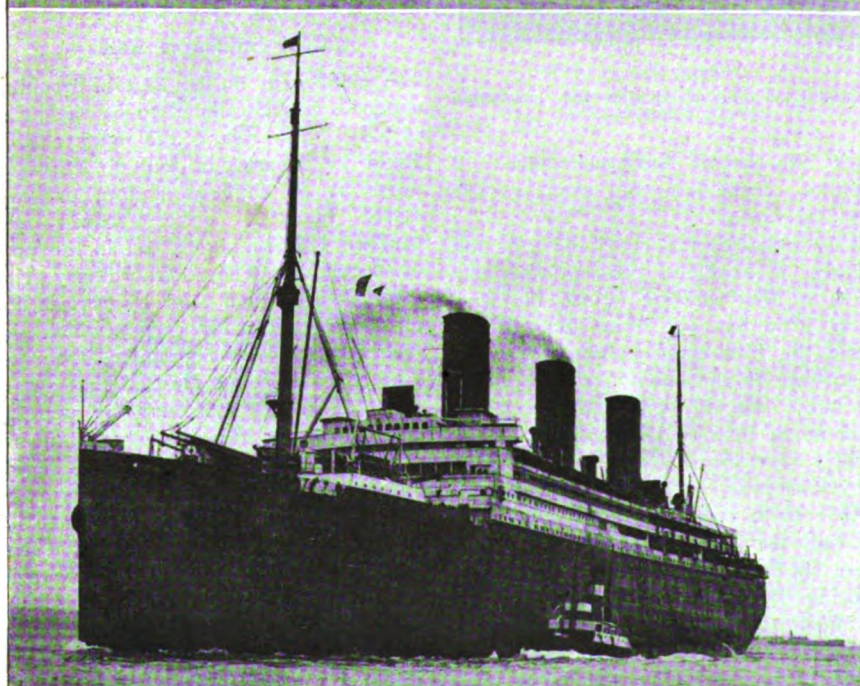
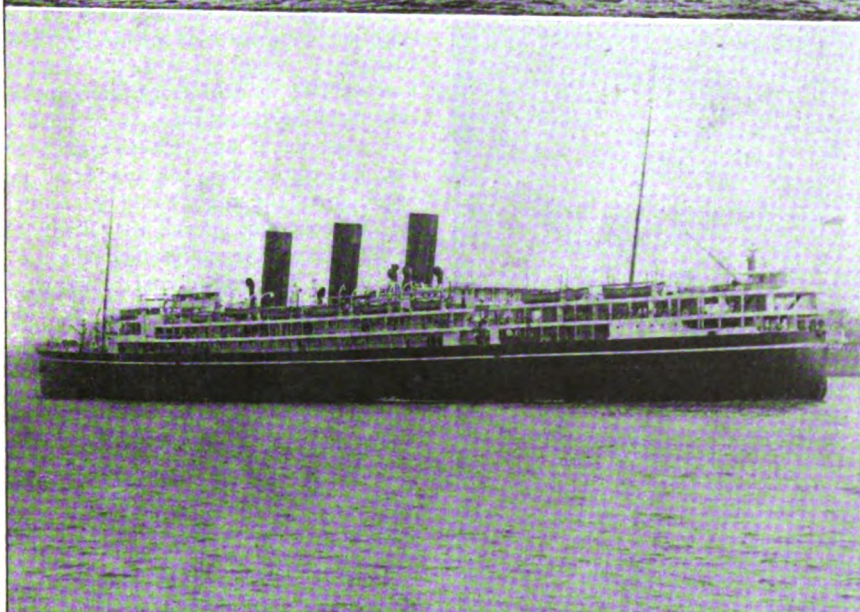
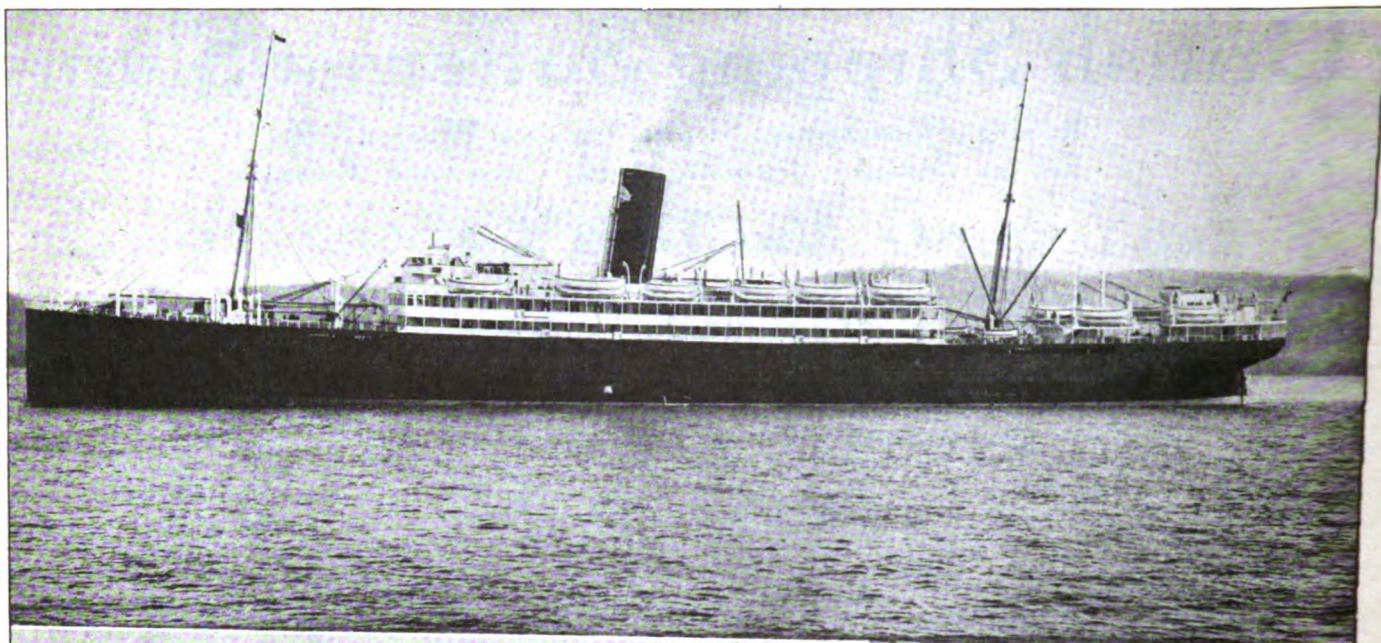
For the greater part of the year the supply of available tonnage was far short of that existing before the war. Very little had yet been done to replace the high-class passenger vessels destroyed by the enemy. On the other hand, demand for accommodation was much heavier than anything previously experienced, owing to the necessary abstention of large numbers of people from traveling during the war. So, at the beginning of 1920, there were in most shipping routes long waiting lists of passengers. As reconditioned vessels gradually came back into service these waiting lists were disposed of, and today the accommo-

dation available is, as a rule, ample to meet all demands made upon it.

This alteration in the position of ocean travel has brought to a head the question of the high level of passage rates. So long as there were many thousands of persons waiting to travel and finding it imperative to do so, the question of the passage rates was hardly a hindrance. But now that the abnormal demand has been satisfied, it is likely to become much more important. The seriousness of the high level of rates is generally recognized by shipping leaders. In December last we had Lord Inchcape admitting that these rates were hard on the passengers, but that the fault was not his company's. He declared that as soon as the rates could be reduced to "an economic level," they would be so lowered. He maintained that, owing to the rise in the cost of all working expenses, the passengers were being carried at less than cost. Then, at the end of the month, Sir Thomas Fisher, the general manager of the Canadian Pacific Ocean Services, Ltd., declared that, owing to the high cost of prevailing passage rates, he saw no immediate future for the tourist traffic. Ships would have to be designed for business men and emigrants. In other words, only those would travel who felt obliged to do so.

Coal Influences Rates

A chief item in the cost of working expenses has continued to be the price of coal. Six years ago bunker coal could be secured in United Kingdom ports at 20 shillings a ton, or less. Early in 1920 prices soared and touched 155 shillings a ton in the port of London. The extraordinary rise was brought to a stop by certain increases in rates for cargo, which the liner companies felt compelled to make. The coal controller realized that something must be done and he was instrumental in bringing about an arrangement whereby the collieries agreed to limit prices to from 60 shillings a ton for small coal to 80 shillings a ton for the best large coal. The price of coal to industrial works was limited to 40 shillings a ton, and throughout the summer shipowners were hopeful that a similar limitation might be applied to bunker coals.



THREE BIG BRITISH LINERS

Above—ORDUNA, 15,500 tons, built by Harland & Wolff, for Royal Mail Steam Packet Co., will operate in Hamburg-New York trade.

Center—New P. & O. liner NALDERA of 15,800 tons, built by Caird & Co., Ltd., which is in the Far Eastern trade.

Bottom—Ex-German IMPERATOR, 52,000 tons, has been operating for a year in the Cunard Co.'s service between New York and Europe.

In this hope they were disappointed.

Wages of all employed on board ship have, of course, been very much increased during the past few years, and last year a good deal of discussion took place on the subject of an 8-hour day at sea. An international labor conference was held at Genoa at which this question was discussed; and it is to be further examined at a conference at Brussels. British shipping managers have expressed themselves against the idea of such a limitation, maintaining that it was quite unsuitable to life at sea, and that the men would be bored to death if they had it.

Big Liners Converted

Outstanding events in the liner industry have been the conversion of the OLYMPIC and AQUITANIA to oil burning, placing of new vessels in the P. & O. service to the East, launching at Belfast of a large liner for the Union-Castle Co.'s service to South Africa, launching of three new vessels on Clyde for the Canadian Pacific organization and the announcement of a new service early this year between Hamburg and New York by the Royal Mail Steam Packet Co., with calls at a United Kingdom and a French port.

Cargo liners have been affected, like the passenger vessels, by the high working costs. During the early part of the year the volume of cargo traffic was large, but in the second half of

the year this traffic fell away in several routes, and particularly in the north Atlantic trade. Early in 1920 liner companies were glad to charter cargo steamers in the open market to supplement their own fleets. With the falling off in trade this demand for vessels on time charter ceased, and this falling off had much to do with a remarkable drop in the time charter rate. At the beginning of the year a rate of 30 shillings a ton dead-weight per month was being paid and 35 shillings a ton was known often to have been offered. By the end of the year the rate had fallen to 10 shillings a ton, and on that basis very little business was done.

So long as the time charter rate was comparatively high, business was clearly attractive to shipowners. In the early months of the year congestion at the ports of the United Kingdom still was serious and those who chartered a vessel had to take the risk of serious delays. They had also to accept the risk of difficulties in the way of securing bunker coal. These difficulties often were very formidable. As the months passed and rates declined, shipowners realized the importance of having good signatures to their chartering contracts.

Managers of cargo liner companies paid much attention during the year to the very serious evil of pilferage of goods. The liner companies were more affected by the prevalence of robberies than any other class of owners. A committee was formed under the auspices of the London chamber of commerce and included representatives of the chamber of shipping. Representatives of the various industries engaged in transport were invited to attend the meetings in order that everything might be done to reduce the extent of the evil.

Its gravity was shown in a report prepared in December and submitted to the home secretary in which it was stated that one ownership was paying claims for pilferage of cargo at the rate of £250,000 per annum. A special police force was organized by the shipping companies in the port of London and there is reason to believe the work of this body has been effective. During the past six months 403 convictions were recorded, as compared with 148 in the previous six months. British shipowners are aware pilferage of goods in transit is rampant throughout the world, but they propose to bring about a great improvement in

the port of London. There is no doubt business men in other ports of the United Kingdom will take similar active measures.

Terms of bills of lading also have been under discussion by managers of cargo liner companies. During the war a practice grew up of marking bills of lading with such a phrase as "shipped or received for shipment." This was often done for the convenience of the merchants, since the ocean vessels were not always ready to receive the goods and, while these were waiting in the warehouses, the merchants had the receipt of the shipowners. With the fall in the value of commodities the position became in some cases a difficult one, since the banks found that the value of the goods on which they had advanced money had seriously depreciated between the time when the

the attitude that the question of when the bills are issued is one on which bankers and merchants should be agreed and that they would fall into line with their wishes.

An active policy was pursued in 1920 by the Canadian Government Merchant Marine, Ltd., a corporation formed by the Canadian government to own and manage a large number of cargo vessels built as the result of the war effort in Canada. A considerable number of services have now been instituted by the Canadian government merchant marine. Especially noteworthy were agreements concluded last year with the British India Steam Navigation Co. for a joint service between Montreal and the Atlantic ports of Canada and India, and with Messrs. Alfred Holt & Co., managers of the Blue Funnel line, for a joint service between Vancouver and the Far East.

The policy of the management of the Canadian Government Merchant Marine, Ltd., has been to work in close conjunction with existing shipping companies and it has, therefore, escaped much criticism that might have been leveled against it as a government enterprise, if it had entered into direct competition with existing services. This Canadian shipping enterprise has the advantage of being worked in connection with the large network of railways now owned by the Canadian government. Its program is an ambitious one which may result in diverting a certain amount of trade from the United Kingdom and also from the United States. In fact, there is no doubt the provisions of the Jones shipping act granting preferential railway rates to goods shipped in American vessels had something to do with this development of the British Columbian trade.

Cargo steamship owners, especially, have felt the reversion from war to peace conditions. As has been shown, they secured complete control once again of their vessels; but freights steadily declined throughout

the year. Twelve months or so ago many new shipping companies were being quickly formed. So confident were their promoters in the prospects for shipping that they were prepared to pay what were generally regarded as very high prices for tonnage. It is significant that some of the old-established and experienced managers were content to part with their vessels on those terms.

It should be remembered the owner

British Shipping Index

PRICES OF REPRESENTATIVE SHIPPING SECURITIES IN 1920

Securities	Highest £ s d	Lowest £ s d	Date
Cunard shares par £	3 17 6	1 0 6	Jan. 19 Dec. 17
Furness, Withy shares, par £.	3 6 10	1 3 0	Jan. 22 Dec. 17
P. & O. deferred £100 stock...	663 0 0	370 0 0	Jan. 22 Dec. 17
Royal Mail S. P. C. £100 stock...	228 0 0	100 0 0	Feb. 10 Oct. 20

SHIP CONSTRUCTION FIGURES FOR UNITED KINGDOM IN 1920

	Gross tons
Tonnage launched	1,992,000
Tonnage commenced last quarter.....	473,000
Tonnage building, Dec. 31.....	3,709,000

SHIPPING MANAGEMENT FACTS IN 1920

	Highest £ s d	Lowest £ s d
Time Charter Rate: Ordinary British cargo steamers per ton d. w. per month.....	1 15 0	0 10 0
Voyage Rates:		
Plate—United Kingdom grain, per ton.....	5 7 6*	2 0 0
Australia—United Kingdom grain, per ton..	7 10 0*	5 5 0
Cuba—United Kingdom sugar, per ton.....	4 5 0*	2 0 0
Fuel		
Coal: Best Welsh large at S. Wales, per ton.	6 0 0	4 0 0
Oil: Per ton at Port Said.....	16 0 0	12 10 0
Wages: A. B. Seamen per month.....	11 10 0†	
Boatswains per month.....	15 0 0†	
Firemen per month.....	12 10 0†	

*These rates were government rates for directed voyages.

†These rates are all subject to an additional "war bonus" of £3 a month which is still maintained. They were fixed by the national maritime board on which both owners and seamen were represented.

goods were first put into the warehouse for transport and when they were actually received by the consignees.

As the result of representations British shipping managers engaged in the eastern trade agreed, therefore, to omit the phrase "received for shipment," and only to issue bills marked "shipped in apparent good order and condition" when the goods actually were put on board. Shipping managers have taken

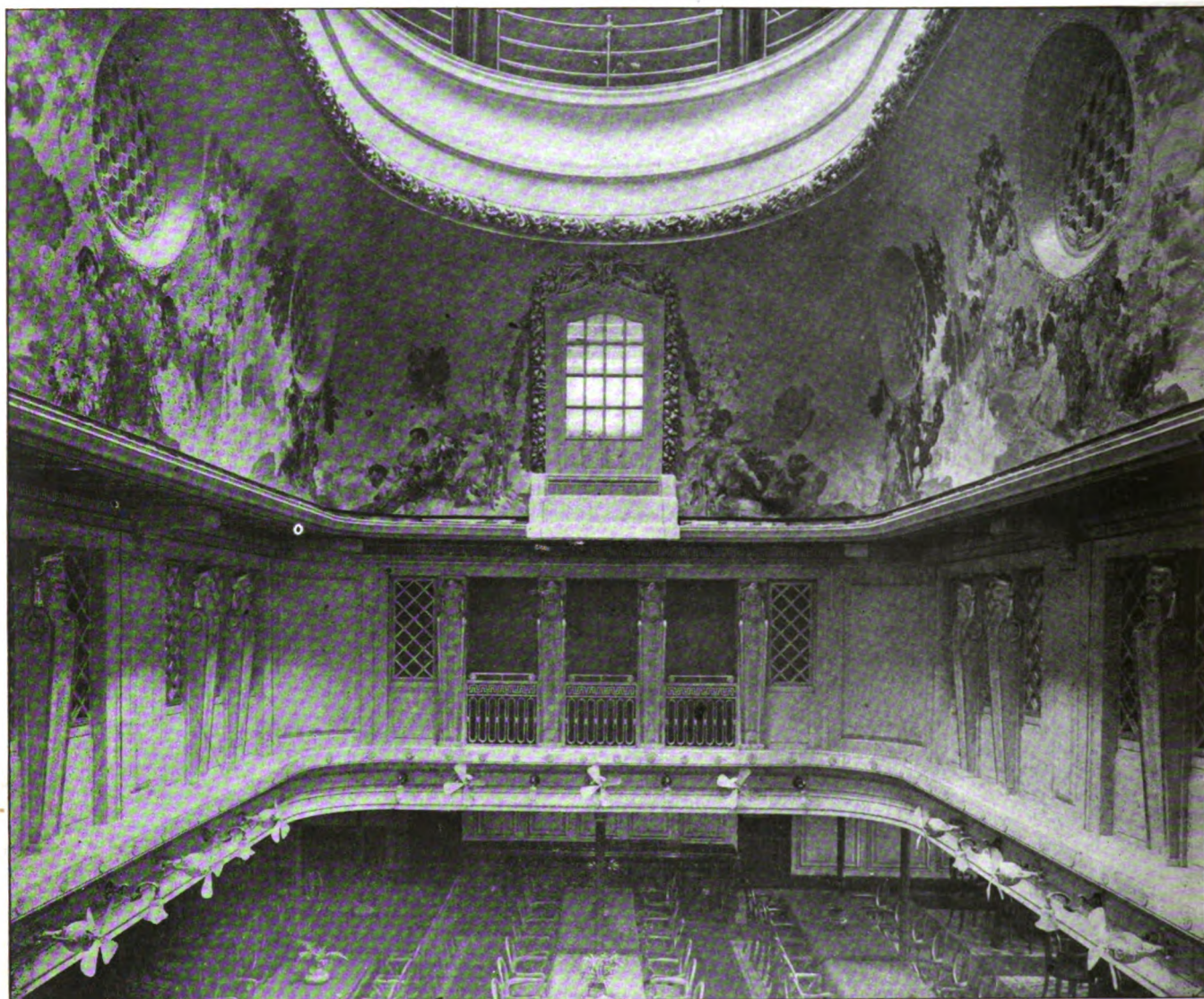
of the ordinary cargo vessel may have a quite different outlook on shipping from that of the manager of a regular liner company. The liner companies maintain services in good times and in bad, whereas the cargo steamship owner may look upon tonnage much as a merchant may regard the commodities in which he deals. He may buy tonnage when he considers the prices are favorable to him and sell it when he thinks that the prices are also attrac-

countries cannot be overlooked. On the other hand, all the world, as we know, has not yet got fully into working order. Some countries are not yet delivering the products of the soil to anything like the extent they should; and others, owing to the breakdown of financial credit, are not able to buy manufactures. So it has come about that the demand for shipping has frequently been disappointing.

For the first nine or ten months of

sels. The trade was of such vast dimensions that in the late autumn, the winter needs of various continental countries seemed to be met and the demand for shipping fell away. This affected the supply of tonnage and rates of freight in other routes which generally declined, for freights are extremely susceptible to the law of supply and demand.

With the coming of autumn, there should normally have been a distinct



DINING SALOON OF THE NEW P. & O. LINER NARKUNDA

This 16,000-tonner, built by Harland & Wolff, Belfast, is a marvel of finish and decoration. Around the oval dome, above the saloon, is a gaily painted frieze by Gerald Moira which, when illuminated by electric lights hidden by a cornice, presents a gorgeous appearance. The NARKUNDA left London on her maiden trip to Bombay on April 24, 1920.

tive. Certain British owners have followed this policy for many years—long before the war. Thus it is quite possible that some owners who have lately disposed of their ships because they thought the prices were high, may buy ships again on a lower basis.

A dominant factor during the past year was the very large amount of cargo tonnage which was put into the water, both in England and in North America. And the development of shipbuilding in various continental

the year freights were greatly affected by the demand for tonnage to carry coal from the United States to Europe. In consequence of the decreased output in the United Kingdom, continental countries could no longer look to British collieries to fulfill their wants. Instead of a great number of short voyages between the United Kingdom and the continent by small vessels, we saw the development of a great trade in coal carried to Europe across the north Atlantic by larger ves-

revival, owing to the movement of crops. But this expected movement never developed on a scale expected by many. It was prevented by the exchange difficulty which raised the price of American grain to European consumers. Australia had a large wheat crop and a considerable amount of tonnage was chartered to transport it. At first freights of as much as 175s. per ton were secured. Then a committee of brokers was formed, working in conjunction with the Aus-

tralian authorities, and quoted 125 shillings per ton. This rate for some time was not generally accepted, on the ground that it was a quite unprofitable one. Nevertheless, at the end of the year tonnage was secured at about 110 shillings per ton. The fall in the rate to bring maize from Argentina to the United Kingdom was remarkable. As compared with the rate paid in the early part of the year by the government of 107 shillings 6 pence per ton, owners were accepting, just before Christmas, 40 shillings per ton. To bring the new crop early in this year, 50 shillings per ton was being quoted, as compared with 60 shillings a few weeks earlier.

Reference has already been made to the decline of the time charter rate from 35 shillings and 30 shillings per ton deadweight, to 10 shillings per ton, a rate which has generally been regarded as being only just sufficient to cover expenses on a steamer of moderate value. In fact, the view of rep-

resentative ship brokers at the end of the year was that cargo tonnage freights were on a level at which it was a question whether there was any profit or not to be earned in respect to them.

The general conclusion seemed to be that an owner who possessed tonnage standing at a low value in his books could still earn a profit, but that it was impracticable for those to do so who had paid heavily for their ships. Confirmation of this view was provided by the laying-up of a number of cargo ships. Even the laying-up of tonnage costs money and owners will not incur this if they see their way to make an even quite small profit on keeping their vessels at sea.

It has to be admitted that the year ended with the shipping industry in a state of depression. So large is the present supply of cargo tonnage that it would be difficult to find any base for an optimistic view of the conditions in the first few months of this

year. Some owners reason freights are now on such a low basis, taking the increased working costs into account, that an upward movement must set in. But the law of supply and demand is inexorable, and there are good authorities who think that the supply will be adequate to meet any increase in the demand which may be experienced in the first months of this year.

Great as has been the fall in freights and values of shipping, it has to be remembered that there have been equally striking drops in the prices of many commodities. Statistics have from time to time been published to show that the average annual return for many years before the war on capital invested in British cargo steamship tonnage was quite small. The ideas of many people respecting profits have been greatly enlarged during the past six years and what is happening means that there is no repetition in sight of earnings on anything like the scale realized since 1914.

What the British Are Doing

Short Surveys of Important Activities in Maritime Centers of Island Empire

B RITISH shipbuilding is winding up the year in a subdued spirit owing largely to the cancellation of orders which has become serious on the Clyde and in other prominent districts; recent orders placed by Norwegian owners for six large cargo steamers also have been canceled. The Lloyd Royal Belge, Antwerp, is canceling orders for four passenger and cargo steamers of 10,000 tons each, which were to have been built by Scott's Shipbuilding & Engineering Co., Greenock, and William Denny & Bros., Dumbarton. The general situation does not presage much improvement in shipbuilding activity in the near future and outward markets have collapsed almost completely, although there has been a slight improvement in current home-ward rates. Some owners are laying up their boats rather than run them at the rates at present obtainable from the United Kingdom, but those firms who have taken steamers on time charter must keep them going at all costs in order to minimize their losses, if they are unable to make a profit.

* * *

T HE German government has delivered 40 steam trawlers to the reparations commission in accordance

with the terms of the treaty of peace. Out of these, 24 have been allotted to Great Britain for final ownership. An arrangement has been reached under which the balance of tonnage still to be delivered may be taken either in the form of steam trawler tonnage, or to equivalent value in the form of drifters, power boats, engines, net-making machinery or other appliances used in the fishing industry. Arrangements have been made also, to discuss the problem of finally distributing this gear with the British Trawlers' federation.

* * *

O WING to the general slowing down in ship construction, the labor situation has taken a turn for the better from the employers' standpoint. Strikes and threats of strikes are by no means as serious as they were six months ago. The shipyard workers have withdrawn their application for an advance of wages of 6 pence per hour, which they have been pressing for some time. After discussing the matter with the employers, the men have decided to adjourn the application for six months. A proposal has been made that in the meantime, a joint committee consider the possibility of adjusting the wages

according to the fluctuations of the industry.

* * *

B RITISH ship owners are becoming seriously concerned over increasing losses resulting from pilferage of cargo, either en route or at the docks. This subject recently has been investigated by a committee formed under auspices of the London chamber of commerce. Suggestions for the mitigation of the evil have been made, including recommendations of more active prosecution and jail sentences for the offenders. The extent of the loss is indicated by the fact that one shipping company is now paying claims for pilferage at the rate of \$800,000 per year.

* * *

A LTHOUGH shipbuilding is declining, the ship repairing industry remains unusually prosperous and a very large amount of work is being prosecuted at present, particularly at Glasgow. Alex. Stephen & Sons are engaged in installing auxiliary engines in the large sailing ship PORTUGAL. This vessel, which has a deadweight carrying capacity of 2000 tons, is being fitted with twin-screw Beardmore oil engines of 200 brake horsepower each, which will give a sea-

speed of seven knots. Recently Messrs. Stephen drydocked the ex-German liner KIGOMA, which has been acquired by the Anchor line for its eastern trade. Many alterations will be required before this vessel is adapted for the trade of her new owners. Extensive repairs are being carried out by the same firm on the steamer SHERBURN, which came to Glasgow with a badly damaged stem. At both the establishments of Barclay, Curle & Co. there is a large amount of work on hand. Among the vessels undergoing repairs at the Clydeside Works, Govan, is the Anchor liner CASTALIA, which is now almost ready for sea after having extensive bottom damage made good. The large yacht BERYL is being converted into a cable-laying steamer. At the Elderslie dockyard of the same firm another interesting conversion job is in progress. This is the changing of a cargo steamer into an oil-tank vessel on the circular tank principle. Another big job is the repair of the CANADIAN WARRIOR, a Great Lakes built steamer, which has involved the renewal of about 60 plates on the bottom of the steamer and 85 floors. Other vessels in the hands of Scotch dockyards are the CYAR and the KURSK and the ex-German steamer BRANDENBURG.

* * *

A REPORT issued by Messrs. Workman, Clark & Co., shipbuilders, Belfast, of the work in their yards during the year, states that six new vessels of a total gross tonnage of 34,433 were launched and seven ships reconditioned. The vessels launched during 1920 included two large meat carrying steamers, fitted for burning and carrying oil fuel; three large fruit steamers, and one general cargo steamer. Of the seven vessels reconditioned the largest was the Royal Mail Steam Packet Co.'s twin screw steamer ARAGUAYA, which had served as a military hospital ship.

Ship Orders Canceled

Many shipbuilding orders have been canceled on the Clyde, owing to the high cost of production. These include a 14,000-ton steamer for an Antwerp firm. The Lloyd Belge shipyard will practically suspend building early next year as it is found exenemy ships on the market can be purchased at about £8 (\$40) per ton less than the net cost of construction. With the pound sterling equal to 55 francs in Belgium it is equivalent to the payment of double prices for Clyde built tonnage. A number of cargo vessel contracts for Scandinavian owners have also been canceled.

Sir Alfred Yarrow, writing in *Yarrow's*

magazine, a journal circulated among his firm's workmen on the Clyde, deals with high prices and emphasizes the danger of a ca'canny system. He points out that the position is hopeless unless there is an increase in the quantity of goods salable in exchange for those wanted. The checking of industries through strikes, limitation of output and otherwise tends inevitably to keep up high prices and still further reduce the rate of exchange.

The ca'canny practice is a fatal cause of the diminution of output and the reduction of exports, he declares. Moreover, it deteriorates the character of every man, who does intentionally less than he can. People who spin out the work to make it last sacrifice future prosperity for the sake of a temporary gain; because to obtain orders they must produce at least as cheaply as their competitors, and if possible, more cheaply. Trade was going to the countries where production costs were low.

With regard to shipbuilding, he said few orders would come to Great Britain because purchasers could not afford the present high prices. In Belgium, for example, the working day on an average was twelve hours and everywhere was found a combination of thrift with industry. The energy of the Belgians is resulting in their being able to undersell England.

Strikes in British Yards

One of the first effects of the slump in British trade has been a strike of joiners in shipyards. In the Clyde district about 5000 joiners went on strike against a proposed withdrawal of the bonus of 12 shillings a week. Workers in other districts have since joined them, including Tyneside, Barrow, Hull Wearside; and about 20,000 carpenters, cabinet-makers and joiners in different districts now are affected.

The bonus was granted last spring in consequence of the high rates prevailing in the building trade, which threatened to attract labor from the yards. There is so much activity in the building trade that a large number of the strikers already have obtained employment in building activity.

A. G. Cameron, general secretary of the Amalgamated Society of Carpenters and Joiners says the increase was granted on account of the rising cost of living and because the joiner was the lowest paid craftsman in the shipbuilding industry.

Built at the yards of R. L. Bean, Camden, Me., at a cost of approximately \$225,000, the 4-mast schooner T. N. BARNDELL, was launched recently. The new craft will engage in the coal trade between South American and European ports.

Dutch Competition Keen

English shipbuilders of the north of England are disturbed by loss of contracts to ship repairing firms at Rotterdam. A second ship repairing contract within a few weeks has been diverted from the Tyne to Rotterdam. The steamer NIGERIA, being converted into an oil carrier, has been ordered to go to a Dutch yard for the necessary alteration, at a contract price of £100,000. She had been undergoing repairs at Smith's Dock, on the Tyne, and her diversion is regarded as a serious blow to the trade of the port. Lancelot Smith, managing director, states the chief cause is the Dutch firm's ability to guarantee quicker delivery, owing to the 3-shift system. In Great Britain there are drastic restrictions against overtime. Arrangements have been made for a deputation of British shipbuilding employers and workmen to visit the Dutch yards.

Some inquiries already have been made with regard to this Rotterdam competition, and it has been found that, while in the English yards no more than six hours' overtime a week may be worked, in Rotterdam there is no limit. The 3-shift system, however, is considered more important. This is not permitted in British shipyards, where the limit is one shift. As a consequence, Dutch firms are able to offer ship owners a guarantee that 20 hours a day will be worked on their ships. Shipowners, who cannot afford to have their ships laid up for long periods, are giving their repair work to firms, which can complete it in half or one-third the time of British yards.

In one big repair job, a Dutch yard tendered for £15,000, and a British yard for £23,000. On that job, it is estimated that the British workmen lost between £20,000 and £25,000 in wages, because of extra work contemplated.

As showing the effect of trade union action, it is stated that some time ago Messrs. Gray & Co., West Hartlepool, were engaged on an emigrant ship, on which about £40,000 had been paid in wages. When, for the first time, permission was asked for some of the men to work overtime on a Saturday afternoon and Sunday to get the ship away to sea, the firm met with a pointblank refusal. Messrs. Gray sent a letter to the trade union representative who, after discussing the matter with his committee, replied, "Seeing that we have a number of our members idle at the present time, my committee felt that they were not in a position to grant your request."

The firm declares there was no possibility of putting on strange men, the work being of a special kind required to be done by men accustomed to it.

Spain Hopes for Old Sea Power

Stimulus Lent Shipping By War Gives Heart to
Lagging Industry—New Yards and Mills Are Built

BY FRANCIS MILTOUN
Our Paris Representative

FROM the first of sea-faring nations, Spain has sunk very low in the maritime scale, though her ports are full of ships, from Mediterranean feluccas to Pacific coast schooners, from British tramps to Italian and French liners. And this is despite the fact it was from the Spanish port of Palos that Christopher Columbus set out to discover that new world which the Palos caravel SANTA MARIA was the first Spanish-built ship to reach.

The late war stimulated Spanish shipping and shipbuilding, aided by material co-operation of the allies in their own, as well as Spain's interests. Economically this meant as much as to the cotton industry of Catalonia, the iron mining of the Asturias and the copper activities of the Rio Tinto. Spanish shipping suffered some, but not greatly, working in the allied cause. Nevertheless the war was the prime cause in the Spanish ship-building revival.

The tonnage built in 1918 was 135,000, with nearly two hundred thousand tons in 1919. Shipbuilding is purely a private enterprise, though the government has offered quasi-encouragement by diplomatic arrangements tending to secure foreign materials otherwise lacking. Besides, the iron and steel plants of the Bilbao-Santander district have been aided by the government through protection of their production and the assurance of controlled prices in accord with the competitive scale in vogue elsewhere. In this district there recently has been built a steel plant specializing in ship plates, which will mean much for future Spanish shipbuilding. Also the

government has allowed private enterprise to make use of government yards and arsenals.

Most important of Spanish shipbuilding plants is the Sociedad Española de Construcción Naval, with a close relationship to the government itself in the make-up of its list of share holders. It has various plants and yards distributed throughout the peninsula and was organized out of ele-

Ferrol in the north and at Cartagena on the Mediterranean. Great docks were built near Ferrol and already there have been built two 10,000-ton passenger steamers and three cruisers for the Spanish government, as well as boilers and engines as equipment for other vessels. The dry dock is 544 feet in length, leading from a wet dock of 3200 feet in length with a depth of water of 26 feet at low tide. At Corunna small wooden ships have been built in considerable numbers during the war and since, including a 3000-ton auxiliary vessel.

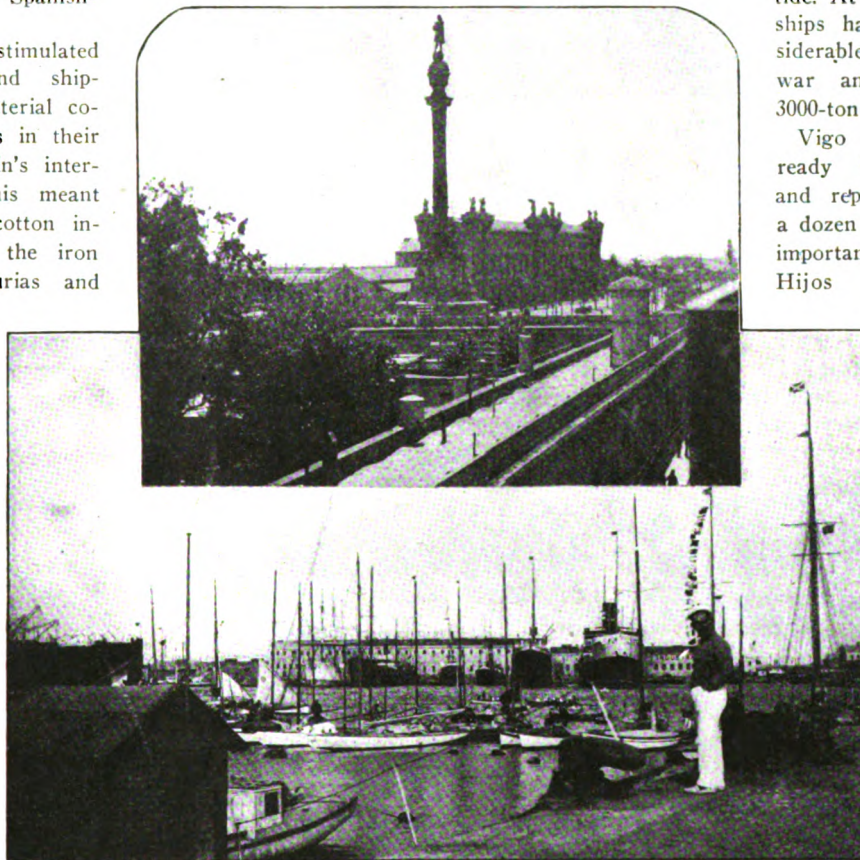
Vigo is developing its already important shipbuilding and repair yards, there being a dozen located here. The most important are the works of Hijos de Barreas. New

works of the same ownership are being constructed at Cova in the same district, which will have a dry dock accommodating ship up to 5000 tons, while steel vessels of 4000 tons may be built. In 1915 Troncoso y San Domingo here built a small repair yard, suitable also for the building of trawlers.

The government dockyard at Cartagena in the province of Murcia is in full activity. Here the Sociedad Española is occupying a part

of this shipyard and, during 1919, there were as many as four torpedo boats, three destroyers and six submarines on the ways at one time, besides two vessels for the important Spanish shipping company, the Transmediterranea. At Tarragona there is a yard with two slips suitable for the constructions of vessels up to 1500 tons, and at Almería is the yard of Alfredo Rodríguez which builds only small sailers.

Barcelona, the greatest of Spanish



SCENES IN BARCELONA, SPAIN'S FIRST SEA PORT

Above—Columbus statue and the customs house Below—A shipyard with glimpse of the harbor's dockage facilities

ments previously existing, by a royal decree under date of 1908. Technical and financial aid was solicited and obtained in England, the full 40 per cent of the capital so allowed by law being in foreign hands. Germany, in spite of the ramifications of its trade and finance throughout Spain, had nothing to compare with this in the days before the war and naturally not at present.

Important works have been built at



DOCKS AND SHIPYARD AT CLJON, ONE OF THE SMALLER PORTS ON THE BAY OF BISCAY

Mediterranean ports, the fourth cotton port of Europe and the chief commercial city of Spain with a population today of not far from a million, where also is an American chamber of commerce, has the Astilleros Cardona with four slips. All are in activity with contracts in hand for four steel vessels of 1000 tons and two of 2500 tons. An auxiliary yard and plant of this company is located at the San Sebastian suburb across the harbor.

The chief Spanish shipbuilding center is at Bilbao in the Basque country on the Bay of Biscay. Here at one time in 1919 a tonnage of nearly 100,000 was under construction and a success has been made of contracts placed on the cost-percentage basis, as being the only satisfactory method of operating under the present economic conditions in Spain. The principal yard of the Bilbao district is that of the Sociedad Anonima de los Astilleros del Nervion, which dates from 1888. Its raw material is supplied chiefly by the Fabrica San Francis-

co, subsidiary, which possesses its own coal and iron mines in the region. Another enterprise is in the Oloveaga suburb, its management wholly in Basque hands, as its name—La Compania Eskalduna—indicates. It is a construction and repair yard with a side activity in salvage. The Sociedad Española de Construcción Naval has also a plant at Bilbao. Others are the Mutizabal y Hernandez Co. and the Astilleros Ardanak. A large passenger liner of 18,000 tons for the Trasatlantica Co. is being built at the latter yard.

In 1918 Bilbao capitalists and the Babcock and Wilcox interests began construction of a large engineering

works under the name of the Sociedad Española de Construcción Babcock y Wilcox. Its output consists of boilers and engines for Spanish built steamers, a side line being the construction of gantry and locomotive cranes and boilers for the types of locomotives used in Spain and Portugal. Previous to the war, this latter specialty was almost exclusively in German hands. The plant covers 30 acres of ground and is ultimately to give employment to 2500 workmen.

At Santander is a small dry-dock and repair yard, with another at Requejada in the neighborhood. Gijon's

shipbuilding, although on a small scale, has been continuously and profitably employed since before the war. Here are La Compania Española de Construcción Metalicos, La Sociedad Astilleros Riera and La Sociedad Astilleros Gijon. At Cadiz the Carraca suburb has ever been noted for its shipbuilding yards and its great government arsenal. The Matagorda plant is owned by the Compania Espanola with work-



HARBOR OF SAN FILEU DE GUIXOLS

Showing a Spanish steamer sunk by German submarines during the war, despite Spain's neutrality

ing rights in the government yard. Another plant here is Los Astilleros Gaditanos, which recently constructed a 5000-ton vessel for the Compañía Vasco-Andalusia de Navegación. Other small plants are at Sancti Petri and Zaporito. A new yard is about to be opened at Puntales with a dry dock which will accommodate up to 12,000 tons. It has an order already for a large cargo and passenger

steamer for the Spanish Transatlantic line.

Seville, once so important in its trading relations with America, has still a minor shipbuilding industry, though disadvantageously situated some distance up the Guadalquivir from the open sea, where but a single yard is actually in operation.

The Balearic Islands, an overnight run from Barcelona, have a dozen

small, scattered shipyards, building only wooden vessels of from fifty to fifteen hundred tons. Outside the mainland, Spanish shipbuilding is insignificant, that of the Canary Islands being practically devoted to repairs. The most important organization in the islands is the repair yard of the Hamilton Co. at Teneriffe, British in ownership and managed by British construction engineers.

Italy Is Fifth In World Shipping

BY OUR PARIS REPRESENTATIVE

BASED upon a year's normal traffic the Italian shipping required to handle the country's overseas freight (beyond the confines of the Mediterranean) is estimated at 2,670,000 tons deadweight. From 1900 to 1910 Italy's steam tonnage had increased 165 per cent; that of France but 49 per cent.

At the end of 1914, before Italy had entered the war, the merchant marine numbered 644 steamers of 1,958,878 dead weight tons. With the subtraction of war losses and the acquisition of other tonnage the figures as of July 1, 1920 were, in detail, as follows:

STEAMERS AND MOTOR VESSELS

Steel
Iron
Wood

of 18,099 gross tons in 1914; while on July 1, 1920, there were registered 5 of 26,183 tons gross.

From a rank of 8th among the world's maritime powers in 1913, Italy has advanced to 5th place. The cargo carrying capacity of the Italian merchant fleet of today probably equals that of the entire tonnage of Italian imports by sea. It will probably exceed this by 1,000,000 tons by the end of 1921, if the Italian shipbuilding program already begun is carried to completion.

History Is Gratifying

is the gratifying history of shipping in recent years. Actual-
management greater
specific needs,
trading
ent fleet,
profits,

practically the totality of the former Austro-Hungarian shipping, for which she is to be credited an agreed upon sum against war indemnities due by the dual monarchy now gone to rest. In all, from November, 1918, to July, 1920, Italy has acquired 94 foreign vessels of 565,267 tons deadweight, with pending negotiations for 186,230 deadweight tons additional.

Italian merchant construction during the past five years up to January, 1920 was:

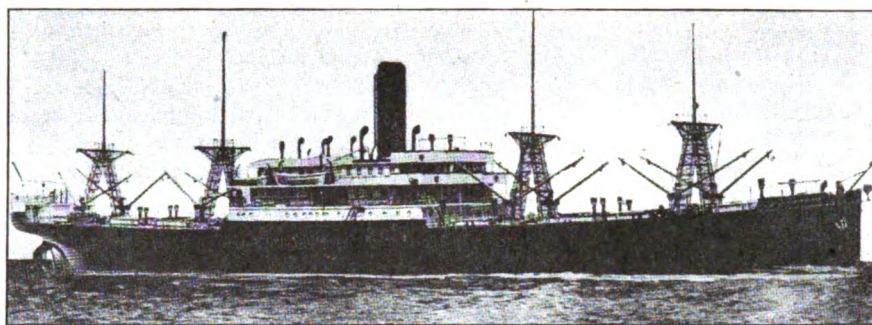
	Steamer	Gross tons
1915	5	22,884
1916	7	31,281
1917	11	65,481
1918	15	66,075
1919	10	52,497

These ships are of a total cargo capacity of 340,000 tons. During the war three of the above units were sunk by submarine attack.

facilities

and there was an absence of labor troubles, which during the past year have been particularly rife. Italy's merchant fleet is based on the seven great transatlantic companies of which the Navigazione Generale was bought by the

Banca Commerciale for 120 million lire at a time German financiers were in control. It was then but a step for the same combination to acquire La Veloce and the Italia and later the Lloyd-Italiana. Call them Italian, if you will, but the complexion was, at the time of the forming of the combination, decidedly Teuton. The Societa dei Servizi Marittimi and the Puglia company were headed by Commendatore Weill, a German naturalized Italian, also a director of the Banca Commerciale. Other companies in which this bank's interests still are found are the Trans-oceanica,



TYPE OF COMBINATION FREIGHT AND PASSENGER SHIPS BEING BUILT IN ITALIAN SHIPYARDS

the Veneziana di Navigazione and the Liguria di Armamento.

Against the Banca Commerciale combination is the Banco di Sconto group with big interests in the Lloyd-Sabuado, Marittima Italiana, Navigazione Alta Italian and the Lloyd-Meridionale. The Banco di Roma also is godfather to the Compagnia Sicilia. Banking is thus shown to play a very important role in the launching and developing of Italian shipping.

For serving its subventioned postal shipping lines Italy has a fleet of approximately 250,000 tons of high grade

passenger and mixed class steamships. Throughout the Mediterranean these sub-ventioned lines practically double those under the French flag and compete with them. During the past year there has been talk of an Italo-French ma-

ritime agreement which should divide up the Mediterranean into spheres of influence, possibly of the pooling of profits; at least some arrangement which should prevent overlapping.

This Franco-Italian method of operating, if it ever comes into being, (and it is advocated by no other than Monsieur Harsmendi, French consul general to Italy,) is for French steamers leaving Marseilles for Mediterranean ports to complete their cargos at Genoa and for Italian steamers leaving Genoa to do the same at Marseilles, the distance across the Gulf of Genoa being a night's run.

France's Shipping Future Doubtful

BY OUR PARIS CORRESPONDENT

SENTIMENT as to France's future in shipping is divided. Optimists believe France is destined to become the mistress of the

petition is able, with Besides The

ship-

and since stand as per the accompanying table, with France in fourth place among the world's shipping, including that of Great Britain and the United States. Without mentioning Austria-Hungary or Germany, Greece is thus shown to be the only continental shipping power whose fleet has diminished as a result of the war. It is a curious comparison. The increase in French and Italian tonnage is explained to a great extent by the enemy tonnage incorporated in their fleets of today, as well to some extent by recent acquisitions built or purchased abroad.

The actual composition of French

sesses 167 steamers of more than 5000 tons, Italy 155, Holland 110.

Apart from purely cargo traffic the overseas passenger trade of France is largely carried on by the one chief transatlantic line, the Compagnie Generale Transatlantique, and the Sud-Atlantique, to North and South America and the West Indies, and the Messageries-Maritimes to the Far East and the various local Mediterranean and Near East lines. All these services have been resumed since the war, though, as yet, none of the fleets has its full complement of tonnage.

France lost 276,000 tons of passenger

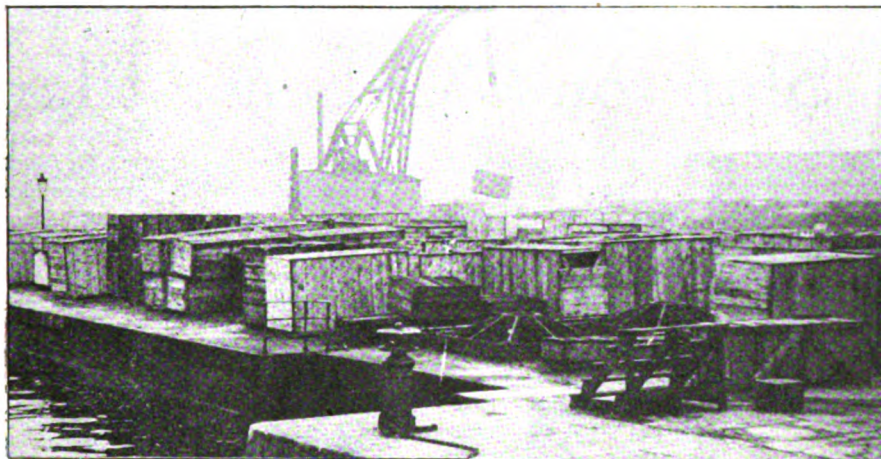
serve to supply one-quarter of the traffic in and out of French ports. If French shipping has increased a million tons since the year of the be-

German Ship Division

Company	Tonnage
Compagnie General Transatlantique.....	32,944
Messageries-Maritimes	29,226
Compagnie Sud Atlantique.....	15,262
Transports Maritimes.....	11,014
Chargeurs Reunis	7,349
Societe Navale de l'Ouest.....	4,901
Soc. General d'Armement.....	7,037
Fabre Line	6,980
Navigation Paquet	4,771
Affreteurs Reunis	3,830
Compagnie Havraise de Navigation.....	3,644
Compagnie Nantaise de Navigation.....	3,385
Chargeurs de l'Ouest.....	2,945
Societe Maritime Nationale.....	2,912
Compagnie Aux, de Navigation.....	2,911
Societe Francaise d'Armement.....	2,860
Compagnie des Chargeurs Francais.....	2,075
Compagnie Delmas Freres.....	2,075
Societe Lerous et Heuzy.....	1,754
Societe Giltet	1,724

ginning of the war, it is wholly because it was needed. If, notably, the ports of Bordeaux, Saint Nazaire and Nantes have so greatly increased their

Dock congestion at Marseilles, France's chief seaport, due to lack of storage warehouse space and insufficient railway spurs



View of the inadequate docks at Havre, where merchandise is stored out-of-doors and passengers must be ferried to and from liners

shipping on July 1, 1920, also is shown by the accompanying table.

Of a significant interest to Americans is the fact that Japan has since the war moved to third in the list of the

Europe's Merchant Fleets

	Measured in gross tonnage.	
	July 1, 1914	July 1, 1920
France ...	1,922,000	2,963,000 +1,041,000
Germany ..	5,135,000	419,000 -4,716,000
Greece ...	821,000	497,000 -324,000
Holland ..	1,472,000	1,773,000 +301,000
Italy	1,430,000	2,118,000 +688,000
Spain ...	884,000	937,000 +53,000
Aus. Hung.	1,052,000	nil -1,052,000
Belgium ..	.....	415,112

France Shipping Status

Steam and Motor Ships	Gross Tons
1073 steel	2,593,609
145 iron	104,875
182 wood and composite	264,745
Total 1400	2,963,229
Sailers	Gross Tons
98 steel	198,973
8 iron	12,157
252 wood and composite	70,835
Total .358	281,965
Gen'l	
Total 1758	3,245,194

world's merchant fleets, now occupying place ahead of France, whereas before the war France held fifth place and Japan sixth. France today pos-



ships during the war and in exchange received but 100,000 tons of German shipping.

The repartition of surrendered German ships allotted to France was as shown in the accompanying table.

French port statistics up to January, 1920, show the greatest movement of imports to the credit of the lower Seine port of Rouen—8,103,610 tons, nearly double that of Marseilles, generally accredited the chief port of France, as indeed it would be considered except for the intensive coal traffic of Rouen, which may well be called the port of Paris.

That French merchant fleet equipment and port facilities are not up to the demands of a great maritime nation there is no doubt. The 3,000,000 tons of French shipping afloat hardly

dock facilities and above all added loading and unloading machinery, during the war and since, of a magnitude that their most optimistic partisans never dreamed of in the old days, it was, again, because they were needed.

Havre, Rouen, Dunkerque, Marseilles and Cette followed suit and from the number of French ships using these ports as compared with the number of foreign ships, as given above, it is obvious that port facilities are ample for the traffic of the moment. Such was found to be the case during the present year, though undercover warehouse room was often lacking, particularly at Marseilles, where the quays today, pretty much as always, are encumbered with merchandise of all kinds which will stand open storage.

If anything has been made apparent

in the French maritime world in the second year following upon the armistice it is that warehouse rather than quay space is lacking, and that railway sidings (except such as were put in by American engineers at Montoire-Saint Nazaire and Bassens-Bordeaux) in the docks are even today inadequate to handle the current business offered.

It is true, also, that the gigantic transatlantic liners are unable to come into the inner basins at Havre and Cherbourg. But curiously enough this de luxe traffic does not seem to object to this embarking or disembarking by tender. The new 29,000-ton ship of the Compagnie Generale Transatlantique

PARIS, which has been held up in uncompleted condition at the Penhoet yards at Saint Nazaire since before the war, cannot get into the inner dock at Havre at full draft. Such ships as the *IMPERATOR* or the *LEVIATHAN* would have been quite unusable by France by reason of not being able to enter any existing French dock or pier.

It is these and correlated facts which have developed in French shipping in 1920, rather than any definite future policy, which should effectually meet the undeniably stiff competition the world's shipping is bound to undergo during the next few years. If France can hold her own on the base of

3,000,000 tons of shipping and keep it all consistently and everlastingly threading the seas, instead of lying up in port and taking a month for a turn-around where six days ought to suffice, the business should be proved profitable. Otherwise heavy government subsidy will be called for.

This assumes, however, the development and upkeep in a high state of efficiency of port material and in most cases the adding of still more than already exists, and the laying down of still further connecting links of railways and waterways—and using them, not allowing them to become grass-grown and ruined by disuse.

British Build Ship on "Cubist" Plan

THE Lamport & Holt line steamer *NEWTON* recently passed through the hands of the Erie Basin plant of the Robins Dry Dock & Repair Co., Brooklyn, N. Y. This boat, which was built during the war emergency by Harland & Wolff, at Belfast, Ireland, for the British government is the first of the English, so-called fabricated boats to be dry-docked in this country.

The *NEWTON* is one of the new "cubist" boats, turned out on a straight line method.

This ship is peculiar in that she has vertical sides down to a bilge, which is cut off at an angle of about forty-five degrees. The bilge plate is carried flat and lapped onto the side and bottom plating. The upper knuckle produced by this method of construction is carried forward into a "chine", which is allowed to die away as it approaches the stem. The after end of the bilge is carried along in the same manner as forward, only the knuckle fades into the "run" of the ship and appears to be swung in an upward curve to meet the other side of the shell plating aft of the rudder.

To add to the odd outlines of the vessel, the stern is cut square off at right angles to the center line. This gives a section resembling a triangle, except that the sides of the ship being slightly "flared" the sides of the triangle are not really straight lines.

The bows of the ship are quite shipshape and above water there is nothing to indicate anything out of the ordinary in the construction of the boat. The flat bilge strake of plating is secured at the butts by outside straps. Masts and other deck fixtures are square in section and the same idea of ease in fabricating the material is held in the deck houses and other deck fittings. To a nautical eye there is a sharp

look to the general appearance of the ship that is not pleasing; but when the question of handling the plates and shapes for building the ship is concerned the design has certainly been simplified as much as possible.

The *NEWTON* has been overhauled, as considerable of her shell plating was in need of fairing and renewing. A great many plates were either faired in place, removed and faired or else entirely replaced with new plates. The yard workmen have one specially good job to their credit on this work. A portion of the lower end of the stem had to be replaced and as a new casting would require considerable time for a new pattern, casting, machine shop work, etc., the blacksmiths were called upon to see what they could do. The result was they secured a large ingot, worked it into the shape required and the whole job was ready for the work of installing in place in a short time.

The rudder plate was faired and all sea connections overhauled while the ship was in drydock. The tail shaft was drawn while in dock and the old propeller was unshipped, sent on deck and the spare one shipped in its place. All ballast and peak tanks were tested for watertightness and any loose rivets found in the hull plating were removed and new ones driven.

The *NEWTON* will be as good as new when she puts to sea again.

Rat Restrictions Reduced

The United States public health service gave the port of New Orleans a valuable Christmas present, Dec. 22, when it announced material modifications in the rigorous regulations laid down more than a year ago for the control of the rat menace, the fumigation of ships, and bills of health for vessels clearing from the Louisiana port. Since

Nov. 1, 1919, New Orleans, has been under modified quarantine, which required ships docking there to be fumigated before they could obtain a clean bill from the public health service, enabling them to land without restrictions in other ports.

Just before Christmas, however, Dr. M. S. Lombard, passed assistant surgeon of the public health service in charge of the campaign to rid New Orleans of plague rats, announced that ships lying at wharves, which have been ratproofed, as to meet requirements of the public health service, need be fumigated hereafter only once in three months.

"Vessels falling in the above class, if destined to coastwise ports, will be given a 'port sanitary statement,' said Dr. Lombard, 'to the effect the vessel has complied with the docking requirements, having laid at a ratproofed wharf, and is exempt from fumigation, or has been fumigated, as the case may be, in accordance with the approval of the bureau.'"

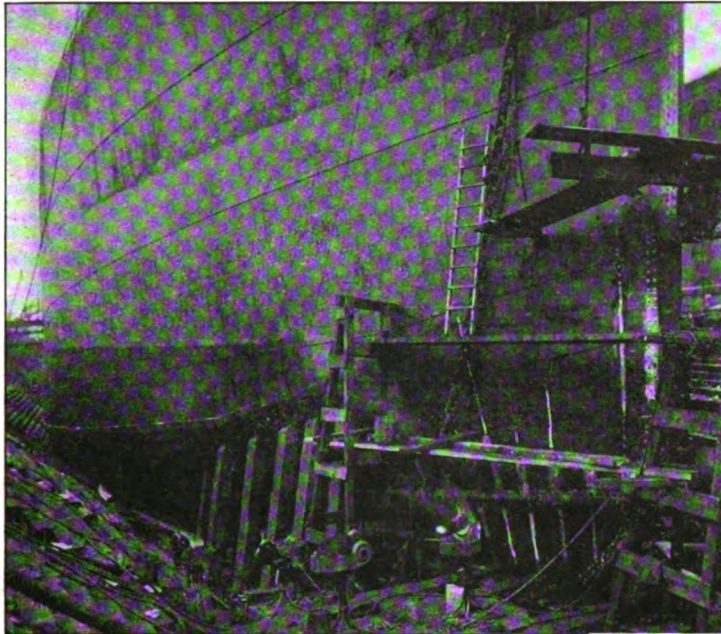
This announcement is based on a ruling just received from Surgeon General Hugh S. Cumming, at Washington.

December Ore Shipments

Iron ore shipments from upper lake ports in December were more than double those of the corresponding month in 1919. The record by ports follows:

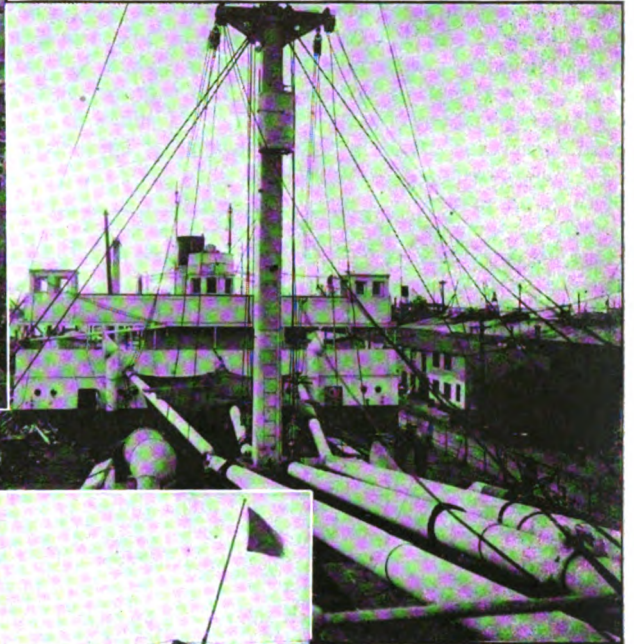
Ports	Gross tons
Escanaba	55,613
Marquette .....	.....
Ashland	6,670
Superior .....	.....
Duluth .....	.....
Two Harbors	38,863
Total	99,146
1920 increase	52,484

TUSCALOOSA CITY, second 10,000-ton steamer built by the Chickasaw Shipbuilding & Car Co. has been launched.



The flat bilge plate of the Newton ends forward in a chine which is carried well toward the stem.

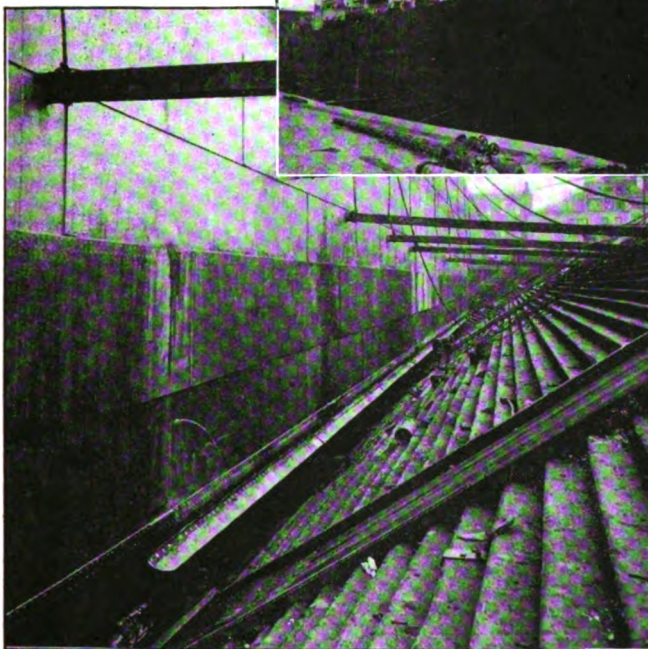
Simplified methods of fabrication were used on the Newton. Ventilator hoods, masts and other fittings were made square for easy working. Only booms are round.



The peculiar style of framing in the Newton is shown by the view of the stern. The upper knuckle of the bilge is carried to the run, where it meets the side plating on the center line of the ship.



To avoid delay in obtaining a casting, the blacksmith shop forged a new shoe from an ingot.



Bilge keels were fitted to the flat diagonal bilge plate when the boat was undergoing repairs.



Traffic On Great Lakes In 1920

Freight Movement on Inland Seas Shows Substantial Gain Over That of 1919—Coal Was a Weak Feature

BULK freight traffic on the Great Lakes during the season of 1920 neared the 100,000,000 gross ton mark, showing a substantial increase in volume over that of the year of 1919.

The aggregate movement of iron ore, coal, grain and stone by lake was 96,274,621 gross tons.

Of this amount 6,983,911 gross tons was stone, leaving a balance of 89,290,610 gross tons of ore, coal and grain, moved by the lake boats during the navigation season. Movement of ore, grain and coal was greater in 1920 than the entire transport of bulk commodities during the year previous. This was due to a variety of reasons, but chiefly to absence of delays from strikes on docks and railroads, with the resulting losses of time and tonnage, which marked the year of 1919 in the upper lake regions. Total shipments of iron ore from the upper lake mines was 58,527,226 gross tons. During the 1919 season, the ore shipped aggregated 47,177,395 gross tons.

This year's movement, therefore, showed a gain of 11,349,831 gross tons. The movement, however, was not as great as that of 1918, when 61,156,732 gross tons was shipped from the ore mines of the northwest.

The curve showing iron ore move-

ment on the accompanying chart, therefore, takes an upward turn for the first year since 1916, which was the peak for a period of more than 20 years.

The movement of coal by lake showed less favorably than that of iron

ore. The aggregate for the season was 24,704,011 gross tons. Of this amount 3,572,638 gross tons was anthracite, leaving 21,131,373 gross tons as representing the lake movement of bituminous coal, both as cargo and for bunker. The coal movement was smaller, both as to total and in both hard and soft coal tonnages, by 2,757,108 gross tons, than that of the 1919 season. This adverse showing was occasioned, in contrast to the improved conditions in the ore carrying trade, by the demoralized conditions on the railroads, and to the heavy demands for export. With every section of the country clamoring for coal, the lake districts were made to suffer in favor of export and

Great Lakes Traffic Statistics

COMMERCE THROUGH SUEZ CANAL

		—Total traffic for—		—Increase or decrease—	
		Season 1919	Season 1920	Amount	Per cent
Vessels:	Items				
Steamers	number	14,866	16,336	1,470	10
Sailing	number	1,218	1,354	136	11
Unregistered	number	1,503	1,157	346	23
Total	number	17,587	18,847	1,260	7
Lockages	number	12,302	13,193	891	7
Tonnage:					
Registered	net tons	50,089,090	58,194,083	8,104,993	16
Freight	net tons	68,235,542	79,282,496	11,046,954	16
Passengers	number	56,992	68,451	11,459	20
Lumber	M. ft. B. M.	244,426	192,854	51,572	21
Flour	barrels	8,087,554	7,477,533	610,021	8
Wheat	bushels	113,734,848	143,456,487	29,721,639	26
Grain	bushels	52,734,345	51,630,135	1,104,210	2
Copper	net tons	58,409	51,545	6,864	12
Iron ore	net tons	46,922,792	56,780,498	9,857,706	21
Mfg. & Pig Iron	net tons	117,713	76,194	41,519	35
Coal, soft	net tons	11,461,962	12,096,993	635,031	6
Coal, hard	net tons	2,412,989	2,059,266	353,723	15
Salt	net tons	93,893	99,208	5,315	6
Oil	net tons	287,023	353,489	66,466	23
Stone	net tons	371,170	563,271	192,101	52
General Mds.	net tons	542,178	556,110	13,932	3

The United States canal was opened April 19 and closed Dec. 26, 1920; season, 252 days.
The Canadian canal was opened April 23 and closed Dec. 23, 1920; season, 244 days.

COAL MOVEMENT ON LAKES, NET TONS

Year	Soft coal				Hard coal	Total coal movement
	Pittsburgh	Ohio	Virginia	Total*		
1920	6,224,719	7,595,471	5,972,895	21,131,373	3,572,638	24,704,011
1919	6,320,693	5,839,942	7,074,985	22,750,392	4,710,727	27,461,119
1918	7,611,005	10,031,577	9,217,790	29,388,242	3,948,705	33,337,127
1917	7,581,465	8,327,460	10,451,667	28,470,279	4,689,983	33,160,262
1916	8,674,000	5,163,000	9,491,000	23,368,000	4,423,800	28,792,800
1915	10,100,000	2,620,000	8,750,000	23,420,000	3,800,000	26,220,000
1914	11,195,000	1,363,000	9,106,000	22,995,000	4,285,228	27,280,228
1913	13,415,473	6,176,624	8,736,586	28,328,683	5,033,696	33,362,379
1912	11,300,000	4,676,000	7,360,000	23,336,000	4,204,741	27,540,741
1911	10,611,941	4,019,544	7,151,200	21,782,685	3,917,419	25,700,104
1910	11,911,800	4,297,300	6,629,500	22,838,700	3,639,368	26,478,068
1909	8,687,395	3,002,815	3,874,570	15,564,780	3,052,706	18,617,486
1908	8,700,000	3,600,000	3,450,000	15,750,000	3,538,098	19,288,098
1907	10,549,995	4,074,296	3,420,941	18,037,232	3,449,695	21,486,927
1906	9,237,722	2,560,906	2,743,732	14,542,360	2,681,808	17,224,168
1905	7,445,883	2,062,692	2,109,262	11,615,837	2,785,362	14,401,199

*Includes fuel coal and also shipments from the Kentucky district and Pennsylvania districts other than Pittsburgh.

GRAIN TRADE OF THE GREAT LAKES

(Shipments of flour not included)

	1920	1919	1918	1917	1916
Lake Superior	203,610,779	171,047,586	154,830,332	253,315,244	319,252,876
Chicago	24,273,000	43,787,244	68,842,269	5,947,955	25,058,000
Milwaukee	11,589,541	6,931,065	17,431,766	1,924,385	3,188,280
Other ports	171,684	1,611,943	4,188,587	1,668,317	16,500,000
Totals, bushels	239,645,004	223,377,858	245,292,954	262,855,601	363,999,156
Totals in net tons	6,736,348	6,091,701	6,548,680	7,161,716	10,555,975

CONTRACT FREIGHT RATES ON IRON ORE AND COAL

	Cents, 1920	Cents, 1919	Cents, 1918	Cents, 1917	Cents, 1916	Cents, 1915	Cents, 1914	Cents, 1913	Cents, 1912	Cents, 1911
Iron ore, head of Lake Superior to Ohio ports, gross ton	110	80	100	100	50	40	50	55	50	60
Iron ore, Marquette to Ohio ports, gross ton	100	72	90	90	45	35	45	50	45	55
Iron ore, Escanaba to Ohio ports, gross ton	85	60	75	75	35	25	35	40	35	45
Coal, Ohio ports to Lake Michigan ports, net ton	60	42.5	55	50	30	30	30	30	30	30
Coal, Ohio ports to Duluth, net ton	50	42.5	48	42.5	30	30	30	30	30	30

AVERAGE DAILY FREIGHT RATES ON GRAIN AND LUMBER

	5.50	3.63	4.67	5.13	2.25	1.14	2.01	2.02	1.17
Wheat, Duluth to Buffalo, bushel	5.50	3.63	4.67	5.13	2.25	1.14	2.01	2.02	1.17
Wheat, Chicago to Buffalo, bushel	5.00	3.00	3.82	2.50	3.08	1.20	1.13	1.43	1.39
Lumber, head of lakes to Lake Erie ports	500	498	491	450	364	261	225	256	276

other trades. It was not until the season was more than half over, that the interstate commerce commission realized this fact and gave lake shipments priority. From that time the movement gained steadily, though early losses could not be entirely retrieved.

The grain movement was greater by 640,000 gross tons than movement of 1919.

The grain tonnage as transported by lake was 239,645,004 bushels, or 6,736,348 net tons during the past season, as compared with 6,091,701 net

Iron Ore Traffic on the Great Lakes in 1920

IRON ORE RECEIPTS AT LAKE ERIE PORTS, GROSS TONS

	1920	1919	1918	1917	1916	1915
Detroit	813,381	549,096	444,936	418,151	425,579	459,877
Toledo	2,654,957	1,536,437	2,608,497	2,445,602	2,035,160	1,158,374
Huron	1,421,509	1,134,104	1,620,712	1,631,395	1,324,112	695,865
Lorain	4,045,286	3,379,421	3,494,370	3,831,244	4,613,929	3,517,258
Cleveland	8,585,757	7,466,921	9,681,882	9,077,161	10,669,745	7,504,697
Fairport	1,247,964	1,952,635	1,853,465	2,311,179	2,580,647	2,001,103
Ashtabula	11,028,518	8,377,277	11,001,574	10,251,304	11,474,268	7,813,101
Conneaut	5,989,763	7,056,882	6,650,898	8,729,754	9,588,341	8,573,509
Erie	2,218,706	1,102,478	1,809,619	2,079,227	1,525,031	709,875
Buffalo	8,196,981	4,649,008	8,845,775	7,843,215	7,432,220	5,339,724
Port Colborne	187,172	219,326	171,287	194,627	138,240	196,077
Total	46,389,994	37,423,585	48,183,015	48,812,859	51,807,272	37,967,460

IRON ORE RECEIPTS AT LAKE MICHIGAN PORTS, GROSS TONS

	1920	1919	1918	1917	1916	1915
South Chicago, Ill.	6,280,521	4,670,054	6,113,492	7,030,174	7,740,877	4,195,976
East Jordan, Mich.	14,452	32,706	33,940	35,792	38,573	37,658
Boyne City, Mich.	30,053	47,061	34,137	44,357	43,788	40,401
Milwaukee	129,039	133,220	166,626	224,570	239,219	187,286
Indiana Harbor, Ind.	1,264,114	1,150,683	1,413,392	900,692	793,215	689,226
Gary, Ind.	3,675,005	2,509,338	3,848,295	3,883,082	2,718,185	2,421,924
Total	11,393,184	8,543,062	11,609,882	12,118,747	11,573,857	7,572,471

IRON ORE SHIPMENTS FROM UPPER LAKE PORTS, GROSS TONS

	1920	1919	1918	1917	1916	1915
Escanaba	7,361,070	4,963,358	6,774,969	7,156,854	7,457,444	5,649,289
Marquette	3,415,108	2,132,935	3,457,054	3,207,145	3,858,092	3,099,589
Ashland	8,180,852	5,915,383	7,565,008	7,597,841	8,057,814	5,146,772
Superior	14,812,398	10,919,965	14,068,341	13,978,741	12,787,046	8,342,793
Duluth	15,479,334	16,821,209	20,567,288	20,567,419	21,837,949	15,437,419
Two Harbors	9,278,464	6,424,545	8,723,472	9,990,901	10,735,853	8,642,942
Total	58,527,226	47,177,395	61,156,732	62,498,901	64,734,198	46,318,804

IRON ORE ON LAKE ERIE DOCKS DEC. 1, GROSS TONS

	1920	1919	1918	1917	1916	1915
Toledo	336,609	332,051	399,839	399,479	394,869	311,799
Sandusky	733,297	698,927	607,233	556,765	590,743	558,692
Huron	1,143,515	777,803	828,384	978,108	1,076,105	824,988
Lorain	1,791,921	2,078,201	2,117,176	1,914,071	1,936,906	1,795,962
Cleveland	498,704	528,360	510,855	536,580	474,930	413,994
Fairport	3,452,503	3,429,258	3,292,738	3,433,624	3,266,752	2,870,204
Ashtabula	2,059,193	1,850,759	1,703,701	1,544,706	1,363,550	1,216,686
Conneaut	374,363	405,761	439,094	519,698	625,193	589,355
Erie	440,749	355,194	525,947	441,318	438,712	326,800
Buffalo						
Total	10,930,854	10,456,314	10,424,967	10,326,349	10,167,760	8,910,351

Average Stay in Port

VESSELS OF PITTSBURGH STEAMSHIP CO.

	1920	1919	1918	1917	1916	1906
	h. s. min.	hrs. min.	hrs. min.	hrs. min.	hrs. min.	hrs. min.
Average stay lower lake ports...	36 30	23 51	23 40	25 58	20 30	36 15
Average stay upper lake ports...	9 28	12 14	9 41	8 42	9 42	22 25
Average time in port receiving and discharging cargoes...	45 58	36 05	33 21	34 40	30 12	58 38
	Gross tons	Gross tons	Gross tons	Gross tons	Gross tons	Gross tons
Average cargo carried...	8,708	8,792	8,625	8,465	7,989	5,954
Largest cargo carried...	13,912			13,503	13,521	13,333
Fastest loading record...	13,088	12,869		12,032	11,379	9,277
Rate of fastest loading record						
	h. s. min.	hrs. min.	hrs. min.	hrs. min.	hrs. min.	hrs. min.
per hour	1 45	10,295		2 5	2 15	0 70
	7,479				5,057	7,288

Size of Great Lakes Bulk Freightier Fleet

Year	No. of vessels Jan. 1	Launchings, number	Subtractions, number	Carrying capacity of new vessels, gross tons	Carrying capacity, subtracted, gross tons	Total carrying capacity, one trip, gross tons
1921	539					3,219,125
1920	538	4	3	50,000	4,212	3,173,337
1919	540		2		13,684	3,187,021
1918	548	1	8		38,742	3,225,763
1917	540	11	3	126,000	9,822	3,109,585
1916	546	7	13	82,000	45,734	3,073,319
1915	546	1	1	10,000	3,104	3,066,423
1914	548	7	9	61,000	26,166	3,031,589
1913	572	4	28	28,000	120,919	3,124,509
1912	589	5	22	49,500	60,945	3,135,953
1911	592	5	8	55,000	29,477	3,108,330
1910	589	20	17	194,500	60,617	2,973,447
1909	587	17	5	157,300	37,197	2,853,344
1908	567	24	4	101,400	14,837	2,766,781
1907	542	40	16	368,000	46,973	2,442,754
1906	511	40	18	381,000	40,987	2,065,111
1905	518	29	33	260,200	114,374	1,919,285

Buffalo Grain Receipts

	1920	1919
Flour, bbls.	4,510,408	5,155,755
Wheat, bu.	74,395,512	56,395,093
Corn	3,826,776	50,000
Oats	5,151,499	14,207,877
Barley	4,468,705	9,986,137
Rye	16,676,107	12,988,760
Total bu.	104,518,599	93,627,867
Flour to wheat, bu.	22,552,040	25,778,775
Flaxseed, bu.	1,626,889	844,260

Grand total, bu....128,697,528 120,250,902

Furnace Shipments

ORE FORWARDED TO FURNACES FROM LAKE ERIE DOCKS MAY 1-DEC. 1

Year	Gross tons	Year	Gross tons
1920....	41,651,241	1917....	43,258,742
1919....	32,648,356	1916....	44,982,917
1918....	43,349,912	1915....	35,149,412

Average Ore Cargo

Year	Gross tons	Year	Gross tons
1920	8485 1909		7777
1919	8543 1908		8325
1918	9371 1907		7516
1917	8231 1906		6973
1916	7080 1905		6101
1915	6841 1904		5272
1914	8523 1903		5668
1913	6411 1902		4899
1912	6244 1901		4459
1911	5716 1900		3783
1910	5593 1899		3803

D. M. & N. docks only up to 1910.
All docks 1910-1920.

Lake Erie Receipts in December

Ports	Gross tons
Buffalo and Port Colborne	162,787
Erie	8,749
Conneaut	16,158
Ashtabula	93,879
Fairport	
Cleveland	37,340
Lorain	11,420
Huron	6,978
Toledo	93,342
Detroit	
Total	430,653

Lake Michigan Receipts

Port	Gross tons
South Chicago, Ill.	9,972
East Jordan, Mich.	
Boyne City, Mich.	
Milwaukee	
Indiana Harbor, Ind.	
Gary, Ind.	
Total	9,972

tons for 1919. There was little to feature the lake grain market, except a late shortage of available boats, which resulted in throwing much of this tonnage to Canadian vessels.

The movement of stone, which is showing steady increase, totaled 6,983,911 tons this year, a gain of 1,263,121 gross tons over that of the season of 1919. For the first time since 1917, new tonnage was added to the lake fleet, four ships being built.

Shows Marine Industry's Growth

Second Annual Exposition Reveals Strength of Firms Now Engaged in or Serving New Merchant Marine

SUPPORTED by the remarkable success of the first national marine exposition held in New York in May of last year, the second annual exposition opens at New York, Jan. 24, with every prospect of duplicating the splendid record of last year's show. The exposition is being held in the Grand Central Palace and marks the final use of this building for exposition purposes.

During the week of Jan. 24-29, the National Marine league, sponsor for the exposition, has prepared an interesting program to supplement and reinforce the public interest in maritime affairs aroused by the exposition itself. The annual banquet of the league will

be held and will be marked by addresses presented by prominent leaders in government and private marine affairs.

During the week a complete program of moving picture displays will be shown to cover not only the work being done by American shipping but to present a comprehensive outline of manufacturing processes followed in turning out various of the more important exhibits.

As shown by the accompanying list of exhibitors, this year's exposition has attracted a large number of the more important firms associated with the country's marine activities. The advance analysis of the exhibits,

given below, reveals the scope of the plans prepared for displaying adequately the products and services of these firms. The exhibits are grouped on the first two floors of the Grand Central Palace, the location of any exhibitor being readily traced on the maps of the floors presented on the facing page.

The American marine industry has attained a growth which is amazing even to those intimately associated with the development. The present exposition offered an opportunity to portray adequately the growth of the industry. A study of the individual exhibits reveals how thoroughly this opportunity has been realized.

What Exhibitors Display at Show

ALUMINUM COOKING UTENSIL CO., New Kensington, Pa.—This company will display a complete line of aluminum cooking utensils for use aboard ships, such as steam jacketed kettles, etc. Represented by G. W. Kemp.

AMERICAN CAR & FOUNDRY CO., New York—This exhibit will include several models of electric rivet heaters. Represented by F. C. Cheston, Walter Earl, John Helt, and D. B. Wallace.

AMERICAN ENGINEERING CO., Philadelphia.—This exhibit will include an electro-hydraulic steerer, an hydraulic telemotor, a spur geared windlass and an electric winch. Represented by P. E. Kriebel.

AMERICAN MANGANESE BRONZE CO., Philadelphia.—This exhibit will consist of bronze propellers and blades, actual service photographs and tests, charts, etc. Represented by T. H. Addie, C. R. Spare and C. J. Bower.

AMERICAN MFG. CO., Brooklyn, N. Y.—The company will exhibit a complete line of marine cordage. A large illuminated picture of the company's plant will take up the entire back of the booth. The booth will be fitted up with chairs for a rest room. Represented by Frederick W. Hackstaff, F. W. Phayre, John J. Reynolds, Robert C. Utess and E. J. Manning.

AMERICAN STEEL FOUNDRIES, Chicago—This exhibit will comprise anchors, marine steel castings, and a number of photographs. Represented by A. Trevor Jones and J. T. Rowbottom.

ASHTON VALVE CO., Boston—This company will exhibit a full line of cam level pop safety valves, engine cylinder relief valves, pressure and vacuum gages, recording gages, engine registers and chime whistles.

BABCOCK & WILCOX CO., New York—The principal features of this exhibit will include full size sections of a marine type boiler and of an express type boiler, both fitted with mechanical oil burners; a complete set of boiler mountings; a complete electric water testing outfit; moving pictures of the manufacture of seamless steel boiler tube; lantern slides of typical marine installations; and test data.

BETHLEHEM SHIPBUILDING CORP., LTD., Bethlehem, Pa.—This company will exhibit two large maps of the United States showing the location of all the plants of the corporation,

together with separate plant models showing the complete facilities of each plant. The exhibit will also include a complete oil burning system, a model of the steamship *TELFORD*, drop forgings, turbine parts, a pair of feed pumps with float tank and automatic control gear, a line of marine valves and fittings, and a hydraulic telemotor. The booth will be furnished complete with ship furniture made by the corporation.

BENSON ELECTRIC CO., Superior, Wis.—This company will exhibit flashlights, fog whistles, and an electric telemotor. Represented by I. F. Halton and A. A. Johnson.

BOUCHER, H. E., MFG. CO., New York—This exhibit will be mainly devoted to a new line of miniature reproductions of power and sailing yachts for educational, experimental, and amusement purposes; castings, parts and fittings for making these; and fittings of all kinds for use on exhibition models. Represented by Dwight S. Simpson and F. J. Harjes.

BOWMAN-EDSON CO., M. K., New York—Photographs showing the exterior and interior of the company's plant and its delivery system will be shown. Besides this, the company will exhibit a bullet tube brush with some demonstrations of the method of cleaning the inside of boiler tubes. Represented by R. L. Suydan and Robert C. Doerr.

BROWN, A. JUDSON, & CO., New York—This company will exhibit samples of large size anchor chain, anchors, and an electrical-driven centrifugal pump in operation.

BRUNSWICK REFRIGERATING CO., New Brunswick, N. J.—A section of a refrigerator showing the insulation and method of installing a complete refrigerating plant on board a ship, also various models of ice making plants will be shown. Represented by Messrs. Wheeler, Whitrey, Denman and Ward.

BUZZINI, WALTER J., INC., New York—The company will exhibit one steamtable with monel metal top, copper dishes, polished iron plate warmer, specially constructed for steamship work, and one 3-compartment steam-tight steamer. Represented by M. M. Bellisandre and Henry Rung.

COLUMBIAN BRONZE CORP., New York—The exhibit of this company will consist of a propeller blade casting for use on large ships

and propellers for small boats, revolving on a show board.

CONSOLIDATED SHIPBUILDING CORP., Morris Heights, N. Y.—A glass enclosed model of the Harlem river plant of the company will be shown. Represented by C. G. Amory.

CORNELL EMERY CO., New York—This exhibit will consist of two distinct and separate sections. In one of these sections there will be a complete refrigerating plant installed with motors and freezing apparatus. The other section will represent the corner of a smoking room on a modern steamship, showing construction as well as decorative scheme. Colored photographs of dining room and smoking room treatments will also be shown, together with a small model of a suite of rooms. Represented by Frank Flenniken and William W. Forbes.

CORY, CHARLES, & SON, INC., New York—This company will exhibit a complete line of electrical ships' telegraphs for steering, docking, engine order, engine revolution, helm angle indications; mechanical telegraphs, electric lighting fixtures, etc. Represented by J. S. Jones, P. S. Grierson, E. H. Weatherspoon, S. N. Mead, W. A. Thomas, and A. A. Kopp.

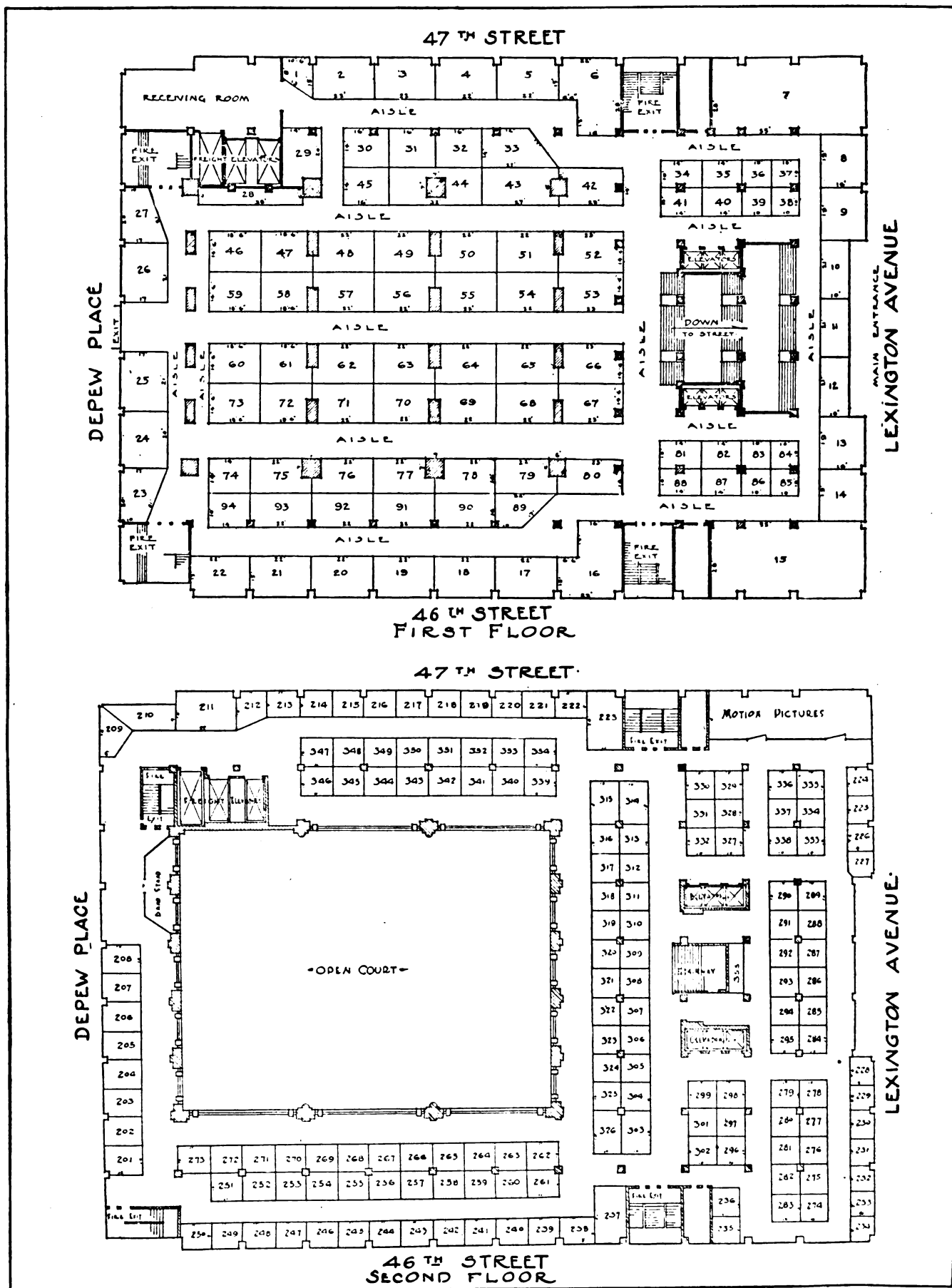
CRANE CO., Chicago—A complete line of valves and fittings for merchant marine and naval vessels will be shown, together with a fully equipped modern ship's bath room. Represented by F. C. Bradbury, Harry Zinkil, E. Morgenthal, G. R. McCurdy, and G. E. Barker.

CRANE PACKING CO., New York—A complete line of metallic packings will be on exhibition. Represented by Julian N. Walton, Theodore Kalisher, James F. White, William Murray, and B. D'Vorin.

CUTTING & WASHINGTON RADIO CORP., New York—This company will exhibit a model radio room completely equipped and in operation. Represented by E. H. Lewis, E. A. Gisburne, C. M. Kelly, Jr., and J. P. Johnston.

DAVIDSON, M. T., CO., New York—Marine pumps of all kinds will be shown. Represented by John Lowe, W. E. Brennan, F. O. Kompass, Thomas J. Robers, and William C. Newell.

DE LAVAL SEPARATOR CO., New York.—This exhibit will consist of a centrifugal oil purifier installed and in operation directly with



FLOOR PLAN OF GRAND CENTRAL PALACE WHERE THE MARINE EXPOSITION WAS HELD JAN. 24 TO 29

the lubrication of a 1000 horsepower steam turbine. Represented by John H. Lisle, Walter D. Cleary, Donald F. Miller, J. Mason and Sidney W. Moss.

DE LAVAL STEAM TURBINE Co., Trenton, N. J.—High and low pressure turbine rotors, reduction gears, high and low pressure pinions, and marine turbine will be shown. Represented by H. J. Kilroy, L. W. Frisbee, C. R. Waller, A. Peterson, K. B. Lagerson, R. Klemm, H. Y. Haden, H. Sinclair, S. B. Felix, James Gordon, F. R. C. Boyd, and H. L. Watson.

DEBEVOISE CO., Brooklyn.—A complete line of marine paints for all purposes and all types of construction will be shown. Represented by Frank W. Tibben, James F. Winans, Frank Day, Thomas C. Wiswall, William H. Starbuck, Arthur M. Mitchell, and Ralph W. Christie.

DEVORE & RAYNOLDS CO., INC., New York.—This company will exhibit its line of marine paints. Represented by H. C. Stedd.

DURKEE MFG. CO., INC., Crasmore, N. Y.—The exhibit of this company will consist of magnetic compasses, a defectoscope, and a magnetic analyzer. Represented by Charles D. Durkee and Charles H. Durkee.

EDISON MFG. CO., Boston.—This company will exhibit its steering gears, diaphragm pumps, and pumping engine.

EDISON MFG. CO., Boston.—The company will exhibit its engine for operating pumps, together with diaphragm pumps, steering gears, boom buffers, and port lights. Represented by J. W. Wickwire, R. Tomlinson, and C. E. Burns.

ELECTRIC ARC CUTTING & WELDING CO., Newark, N. J.—Appliances for use in arc welding such as welders' masks, shields, electrodes, welders' gloves and aprons. Represented by C. J. Holslag, H. W. Livermore, P. E. Fay, and R. G. McAllister.

ELECTROSE MFG. CO., Brooklyn, N. Y.—This exhibit will comprise a complete line of insulators and insulating parts for marine installations. Represented by Louis Steinberger, Emil Steinberger, E. H. Poggenburg, and Samuel Weiss.

FOSTER MARINE BOILER CORP., New York.—This company will exhibit a water tube boiler, a marine superheater, and a marine economizer. Models and elements of construction will be on exhibition. Represented by J. Glander, and P. W. Foster, Jr.

GENERAL ELECTRIC CO., Schenectady, N. Y.—This exhibit will include a complete turbine rotor, a model showing the electric ship propulsion machinery as installed on the S. S. ECLIPSE, a marine type spring thrust bearing in operation, motors, welding outfits, searchlights and switchboards. Represented by E. O. Hunt, C. T. McLaughlin, and S. V. Travis.

GOLD CAR HEATING & LIGHTING CO., New York.—Electric heaters; bridge and look-out foot warmers, and thermostat controls. Represented by F. H. Smith and F. O. Bailey.

GRISCOM-RUSSELL CO., New York.—The company will show a marine evaporator, feed-water heaters, a multiscreen filter, multiwhirl lubricating oil cooler, a strainer set, and air separators. Represented by Lynn W. Nones, Robert Colston, and Armin S. Hoffman.

HAMILTON & HANSELL, INC., New York.—This exhibit will consist of a log, a speedometer, and a soot blower. Represented by N. V. Hansell, H. A. DeFries, J. Herlenius, O. Swenson, G. J. F. Carey, and S. Bergstrom.

HYDE WINDLASS CO., Bath, Me.—A varied line of auxiliary deck machinery will be shown in which will be included a hydro-electric steering gear, a steam tiller, a hydraulic tele-motor, and several bronze propellers. Represented by F. L. Audreus.

INTERNATIONAL MERCANTILE MARINE CO., New York.—Paintings of some of the company's ships, together with a model of the OLYMPIC will be exhibited.

INTERNATIONAL NICKEL CO., New York.—This exhibit will consist primarily of monel

metal and nickel products. Represented by F. H. Waycott, E. S. Wheeler, H. S. Arnold, T. H. Dauchy, G. A. Wotherpoon, E. K. Jenckes, and W. G. Schneider.

KAHNWEILER'S, DAVID, SONS, New York.—Life preservers, ring buoys, fenders, line-throwing guns, cushions and a model of a lifeboat and life raft will be shown. Represented by David Kahnweiler.

LOCOMOTIVE SUPERHEATER CO., New York.—This company will exhibit a section of a Scotch marine boiler, complete in all details with superheater installed, also a full size horizontal section through the flues of the boiler with superheater units in place. Represented by H. B. Oatley, G. E. Kershaw, G. C. Fuller, A. Starr, G. F. Pippey, William McIntock.

LUNKENHEIMER CO., Cincinnati.—A complete line of bronze, iron and steel valves will be shown, together with an extensive array of boiler mountings and lubricators. Represented by W. A. Reynolds, J. E. Cooper, Frank Hyatt and Phillip Smith.

MARINE DECKING & SUPPLY CO., Philadelphia.—Steel and wood tackle blocks and marine paints will be shown. Represented by George W. Selby, W. J. DuBree, and William Tyler.

MARINE REVIEW, Cleveland.—The booth will be fitted as a rest room for exhibitors and visitors. Represented by R. V. Sawhill, F. V. Cole, W. S. Dorse, V. G. Iden, G. D. MacDonald, L. D. West and W. B. Price.

MARINE WORKS, New York.—This exhibit will comprise cooking equipment and utensils and special sheet metal products for the steamship trade.

METAL & THERMIT CORP., New York.—This company will demonstrate the thermit process of welding pipe in ship refrigeration plants and will show a section of a large crankshaft on the pin journal of which a thermit weld was made. In addition, there will be moving pictures describing a thermit welding repair of the stern post of the S. S. NORTH-ERN PACIFIC. Represented by W. R. Hulbert.

NATIONAL LIFE PRESERVER CO., New York.—The exhibit of this company will include various sizes of the safety suit, made for men, women and children and will be demonstrated on life size models. The suit will be shown in detail also. Represented by Andrew E. Puckrin, J. E. Jackson, J. A. White, O. J. Kaiet, E. F. Anderson, and O. A. Youngren.

NEW YORK ENGINEERING CO., New York.—This company will exhibit one model water tube marine boiler, complete with all valves and fittings and equipped with three oil burners. Represented by Frederick P. Rose and A. A. Sappelle.

NILES-BEMENT-POND CO., New York.—A turbine reduction gear; a gear testing machine and various gears, including spur gears, herringbone gears, spiral gears and ground gears will be shown.

PAIGE & JONES CHEMICAL CO., New York.—The company will exhibit its method of treating marine boilers with zinc and soda ash and will display a water testing cabinet. Represented by R. A. Levy, F. H. Mounts and H. B. Bennett.

PANTASOTE CO., New York.—A cabin, representing a regulation stateroom, built entirely, inside and outside, of fibre board will be shown.

PORT OF NEW YORK ANNUAL, New York.—The 1919 edition of this book will be on exhibition. Represented by Alexander R. Smith, Charles Campbell, L. L. Blue, and J. Durkee.

POWER SPECIALTY CO., New York.—Marine superheater for both scotch and water tube boilers and a marine economizer for use with boilers will be shown. Represented by J. McKenzie, F. Glander and P. W. Foster Jr.

PNEUMATOR CO., INC., New York.—A complete line of fuel oil measuring, ship draft and cargo weighing instruments will be shown. Represented by Gardner Cornett, H.

S. Parks, H. L. Snider and William Thomas.

PYLE NATIONAL CO., Chicago.—This company will exhibit a full line of turbogenerators, searchlights, and standard marine fixtures. Represented by J. D. Sarles.

REID, JOHN, & CO., INC., New York.—Marine forced draft equipment, including furnace fronts, fans and engines; marine auxiliaries, such as electric lighting sets and circulating pumps, will be shown.

ROEBLING'S, JOHN A., SONS CO., Trenton, N. J.—Full line of marine ropes, such as hawsers, mooring lines, yacht rigging and guy ropes, hoisting ropes, etc., will be shown, as well as wire rope fittings and wire rope blocks. The company will also display a working model of one of its hawser reels. Models, photographs and drawings will describe its line of wire rope slings. Represented by J. J. Fitzpatrick.

ROW & DAVIS ENGINEERS, INC., New York.—Marine evaporators, feed water heaters, filters, grease extractors, a distilling condenser, and a fresh water still will be shown. Represented by R. P. Kanski.

SHONBERG, I., INC., Brooklyn.—This company will exhibit babbitt metals, both as raw materials and finished products. Represented by J. J. Kehoe, J. J. Mayer, and L. Shonberg.

SPERRY GYROSCOPE CO., Brooklyn, N. Y.—The company will exhibit a working model of a gyroscope, photographs and records of stabilizer installations, a gyroscopic compass, a ship's log, and other navigational equipment. Represented by T. A. Morgan, R. B. Lea, C. D. Jobson, and O. B. Whitaker.

STEWART DAVIT & EQUIPMENT CORP., New York.—Full-size life saving equipment will be set up and operated at the exhibit. Mechanical boat davits, oil-hose davits, submarine bell davits, etc., will also be shown. Represented by R. B. Stewart.

SUBMARINE SIGNAL CO., Boston.—This exhibit will consist of a standard submarine signal receiving set, submarine bell lightship equipment, together with several specialties. Represented by E. P. Howe, J. E. Colloton, William Mozart, Eugene Irwin, and H. J. W. Fay.

TEXAS CO., New York.—Samples of marine oils and greases will be shown. Represented by Frank J. Shipman, C. P. Dodge, Jr., H. W. Sallador, L. O'Mally, A. St. James, D. Perry Quinn, J. L. Ward, L. A. Wilson, and H. W. Schilling.

TIEBOUT, W. & J., New York.—Ship hardware of all kinds will be shown. Represented by John Tiebout, Jr., Charles F. Taylor, George V. Carlin, Frank Morrissey, and John D. Gillespie.

TODD SHIPYARDS CORP., New York.—Large models of a modern ocean liner and of a floating drydock will be exhibited.

TOPPING BROS., New York.—This company will exhibit a full line of marine hardware and ship joiners' hardware. One of the latest types of power capstans will also be shown. Represented by J. N. Topping.

UNITED STATES MAIL STEAMSHIP CO., INC., New York.—The steamers PANHANDLE STATE and OLD NORTH STATE, the first passenger vessels turned out for the shipping board and operated by this company, will be featured at the exhibit. Represented by H. S. Appleton.

UNITED STATES METALLIC PACKING CO., Philadelphia.—The exhibit will consist of samples of duplex block and metallic packings. Represented by Elmer E. Allbee.

VAN NOSTRAND, D., CO., New York.—A selected list of books on navigation, nautical astronomy, seamanship, marine engines and marine engineering will be displayed. Represented by A. G. Meaning and E. M. Crane.

VALENTINE & CO., New York.—This company will make severe and novel tests on its varnish.

WHEELER, C. H., MFG. CO., Philadelphia.—This company will exhibit different types of air pumps as well as different types of conden-

Where You Will Find Every Exhibitor at Second Annual Marine Exposition, New York, Jan. 24-29

Exhibitor	Booth No.	Exhibitor	Booth No.	Exhibitor	Booth No.
Aluminum Cooking Utensil Co.....	270	Globe Shipbuilding & Drydock Co.....	14	Pneumercator Co.	221, 222
American Balsa Co.....	19, 20, 21	Gold Car Heating & Lighting Co.....	220	Power Specialty Co.	264
American Car & Foundry Co.....	65	Goodrich Transit Co.....	343	Pyle National Co.	237
American Chain Co.	304, 305	Gregory Galvanizing Works, Thomas.....	28	Quasi-Arc Weldtrode Co., Inc.....	23 main floor
American Engineering Co.....	17	Griscom-Russell Co.	277, 278, 279, 280	Reid & Co., John.....	18
American Manganese Bronze Co.....	29	Hamilton & Hansell, Inc.....	317	Roberts Safety Boiler Co.....	294
American Mfg. Co.....	43	Hansen & Yorke, Inc.....	306, 307	Roebbing's Sons Co., John A., of N. Y..	320
American Steel Foundries	36	Hartman Co., Chas.....	341	Row & Davis, Inc.....	209, 210
Asbestolith Mfg. Co.	38	Hyde Windlass Co.	16	Scovill Mfg. Co.	301
Ashton Valve Co.	284	International Mercantile Corp....	46, 47, 58, 59	Sea Power	256
Atlas Boot Blower Co.	345	International Nickel Co.....	312, 313	Shepard Electric Crane & Hoist Co....	30, 31
Babcock & Wilcox Co.....	10, 11, 12	Irving Iron Works.....	74	Shipping Publishing Co.....	302
Baltimore Dry Docks & Shipbuilding Co....	55, 56	Jahncke Drydock & Ship Repair Co....	350	Shonberg, I.	271
Beaver Tile & Specialty Co.....	213	Kahnweiler Sons, David.....	269	Simmons-Boardman Publishing Co.	332
Bethlehem Shipbuilding Corp....	78, 79, 89, 90	Kelley Industrial Corp.....	327	Smith's Port Publishing Co.....	291
Benjamin Electric Co.....	322	Kinney Mfg. Co.....	299	Sperry Gyroscope Co.	8
Benson Electric Co.....	294	Locomotive Superheater Co.	48	South Atlantic ports.....	218, 119
Boucher Mfg. Co., H. E.	33	Lord Dry Dock Co.	298, 297	Stark, state of Adolph.....	248
Bowman-Edson Co., M. K.....	241	Luckenback Steamship Co.....	87, 88	Steward Davit & Equipment Co.....	66, 67
Brown & Co., A. Judson.....	298	Lunkenheimer Co.	24	Sturtevant Co., B. F.	26
Brunswick Refrigerating Co.....	44	Mack Engineering & Supply Co.....	251	Submarine Boat Corp.	60, 61, 72, 73
Buzzini, Inc., Walter.....	282	Mallory Industries, Inc.....	64	Submarine Signal Corp.....	314, 315
Campbell, G. W.	203	Marine Canvas Supply Corp.....	273	Sun Shipbuilding Co.....	Part of 7 main
Coen Co.	9	Marine Decking & Supply Co.....	293	Texas Co.	223
Columbian Bronze Co.	342	Marine Review	353	Thorne Mfg. Co.	330
Columbia Rope Co.	62	Marine Works	283	Thorne Pioneer Co.	303
Consolidated Shipbuilding Corp.	268	Maritime Engineering & Sales Corp....	37	Thorsen Co., P. S.	77
Cornell-Emery Co.	75, 76	Masten Co., George H.....	259	Tiebout Co., W. & J.....	225, 226
Cory & Sons, Inc., Chas.	41, 34, 35	Metal & Thermit Corp.....	39	Todd Shipyards Corp....	50, 51, 52, 53, 54, 55
Crane Co.	68, 69	Munson Steamship Line.....	83, 84, 85, 86	Topping Brothers Co.	252, 253
Crane Packing Co.	328	National Hoisting Engine Co.....	94	Traffic Service Bureau.....	281
Cutler-Hammer Mfg. Co.	70	National Life Preserver Co.....	212	United Marine Contracting Corp....	2 and 1/2 of 3
Cutting & Washington Radio Corp....	202	Nautical Gazette	340	United States Mail Steamship.....	22
Davidson Co., M. T.....	326	Nelson Encyclopedia	254	U. S. Metallic Packing Co.....	228
Debevoise Co.	242	Nepfune Association	266, 267	Uttmark's Nautical Academy.....	319
De Laval Separator Co.....	93	Neptunus Ship Supply Co., Inc.....	329	Valentine & Co.....	238, 239
De Laval Steam Turbine Co.....	91, 92	New Jersey Asbestos Co.....	227	Van Nostrand Co., D.....	318
Devoe & Reynolds, Inc.....	214	New York Engineering Co.....	324, 325	Wager Furnace Bridge Wall Co., Inc....	339, 354
Donnelly, William T.....	257	New York Marine News Co.....	295	Waffles-Dove-Hermiston Corp.	344
Duparquet, Huot & Moneuse.....	240	New York Maritime Register.....	204	Wall Rope Works.....	42
Durkee & Co., Chas. D.....	250	Niles-Bement-Pond Co.	40	Ward Leonard Electric Co.....	206
Durkee Mfg. Co.	292	Ocean Marine Engineers' Beneficial As- sociation	336, 337, 338	Waterbury Co.	81, 82
Edson Mfg. Co.	316	Ocean Paint Works.....	205	Wheeler Mfg. Co., C. H.....	49
Electric Arc Cutting & Welding Co....	201	Pacific Mail Steamship Co.....	32 main	Whitlock Cordage Co.	80
Electrode Mfg. Co.	71	Paige & Jones Chemical Co.....	311	Williams, William E.....	308, 309, 310
Fairbanks, Morse & Co.....	45	Penton Publishing Co.	353	Williams Valve Co., D. T.....	227
Fire Detecting Wire Co.....	272	Pantasote Co.	216, 217	Wilson Welder & Metals Co.....	25
Foster Marine Boiler Corp.....	265	Pioneer Metallic Packing Co.....	321	Woodward & Chamberlain.....	258
Fuller Co., Geo. A.....	13	Plymouth Cordage Co.	63 main	Woolsey Paint & Color Co., C. A.....	245
General Electric Co....	4, 5, 6 and 1/2 of 3			Worthington Pump & Machinery Corp. 1/2 of 15	
Gillespie & Son, Chas. H.....	249				

sate pumps, together with a dynamometer. Represented by G. L. Kothny and J. Dobson.

WALL ROPE WORKS, INC., New York.—This exhibit will comprise manila hawsers.

WILLIAMS, WILLIAM E., VALVE CORP., New York.—Cast steel, cast iron and bronze valves for high pressure service will be shown. Represented by William E. Williams.

WHITLOCK CORDAGE CO., New York.—There will be displayed a complete line of

marine cordage and a large painting showing various steps of hemp fiber industry in the Philippines. An expert on knots, bends, etc., will give demonstrations.

WILSON WELDER & METALS CO., Brooklyn.—A practical demonstration of the company's welding equipment will be conducted. Represented by Claude Hartford, Alexander Churchward, R. G. Hutton, F. M. Allan, H. E. Smith, W. M. Bastable, R. S. Knowles, A. R. Fullerton,

Jr., D. Gundacker, A. J. Finck, and M. O. Lundquist.

WOODWARD & CHAMBERLAIN, INC., New York.—The company will exhibit a line of marine supplies for deck and engine equipment. Represented by W. R. Chamberlain, F. L. Woodward, R. H. Stidfole, and John Weis.

WOOLSEY, C. A., PAINT & COLOR CO., Jersey City.—The exhibit will include samples of the company's products. Represented by Percy Varley.

Marine Business Statistics Condensed

New York Traffic

In number of ships, the entrances and clearances at the port of New York were larger during December although the net tonnage of the entrances showed a decline, while the net tonnage of the clearances showed an increase. Despite the fact that both export and import freight have been scarce recently, the traffic of New York during the calendar year just closed was the largest in history. Nearly one thousand more ships used the port of New York last

**VESSELS ENTERED THE PORT OF NEW YORK
1913—1920**
(Foreign Trade)

Year	No. Ships	Net Tonnage
1913.....	4,741	15,957,960
1914.....	4,524	14,985,765
1915.....	5,259	13,385,366
1916.....	5,487	14,330,700
1917.....	4,927	12,607,452
1918.....	4,243	10,379,140
1919.....	5,261	14,722,508
1920.....	5,662	18,059,306

year than entered during an average year prior to the world war. The net tonnage of the ships that entered during 1920 was approximately 23 per cent greater than during 1919. November the clearances at New York were consistently smaller than the entrances, resulting from the slump in business which became acute last fall. This situation, however, was somewhat reversed during December as in that month the clearances were nearly 10 per cent larger than the

NEW YORK PORT TRAFFIC 1920
(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
January	372	1,143,126	410	1,450,778
February	377	1,174,913	330	1,054,269
March	440	1,322,013	410	1,369,829
April	431	1,302,177	386	1,243,000
May	444	1,343,062	390	1,258,996
June	508	1,545,144	436	1,364,297
July	510	1,627,721	462	1,518,406
August	537	1,654,719	499	1,649,416
September	506	1,728,266	493	1,574,228
October	526	1,763,904	514	1,719,103
November	495	1,741,786	482	1,691,633
December	516	1,732,485	518	1,802,929
Total	5662	18,059,306	5330	17,696,934

entrances. The record of the year shows a net clearance approximately 10 per cent smaller than the entrances but this was due to the abnormal advance in the cost of bunker, the difficulties of rail shipments to and from the port, and, during the latter part of the year, to the scarcity of cargoes. Ships have been unreasonably detained.

Bunker prices have shown a further drop during the month. Whereas

coal brought \$8.60 the first part of December, it was quoted around \$7 alongside at the beginning of the new year. Cheaper grades of coal were bringing as low as \$5.50 a ton, and some of the best grades sold for as much as \$7.50. This decline in coal was reflected in a reduced quotation on oil bunkers. Fuel oil, 16 baume, was quoted \$2.94 a barrel early in January and diesel oil was selling for 10 cents a gallon.

Philadelphia Traffic

Philadelphia has managed to maintain a growth in port traffic during the past year although it was not commensurate with the opportunities offered. Clearances during the past year showed approximately but a 10 per cent increase over 1919 traffic, while the entrances showed a 12 per cent increase. During the past three years, the total clearances at the port of Philadelphia have shown a constant increase over the entrances, but this is due to the fact that many new ships have been built along the Dela-

PHILADELPHIA PORT TRAFFIC
(Including Chester, Wilmington and the whole
Philadelphia port district)
(Exclusive of Domestic)

Month	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
January	76	195,397	74	224,909
February	76	205,350	71	261,123
March	106	280,185	71	192,279
April	100	236,487	98	266,795
May	129	316,246	126	315,997
June	121	286,061	79	196,787
July	104	250,104	93	272,913
August	153	377,695	156	438,230
September	144	385,676	153	467,357
October	119	328,074	165	465,800
November	126	338,562	123	350,385
December	116	340,133	112	235,821

(Overseas only)

Year	—Entrances—		—Clearances—	
	No. ships	Net tonnage	No. ships	Net tonnage
1918	820	2,021,794	729	2,043,841
1919	1146	2,780,532	1272	3,315,597
1920	1370	3,489,970	1321	3,688,396

ware and docketed at Philadelphia for the first voyage.

Clearances during last December showed a decided falling off. The number of ships entered during the last month of the year was smaller than the number entered in any month since last spring with the exception of July, but the net tonnage of the December entrances was slightly larger than the net of either October or November. This net, however, fell below the records made by the port during last August and September.

Bunker prices have recorded a sharp decline at Philadelphia. The average cost of the bunkers on ships clearing

the port during December was \$9.45 a ton for coal and \$2.61 a barrel for fuel oil. Some of the ships clearing this port early in January were compelled to pay but \$7.50 a ton for bunker coal and but \$2.08 a barrel for fuel oil.

Boston Traffic

Tonnage of American vessels at Boston, both entered and cleared, fell off slightly during December, but foreign off-shore trade shows an appreciable increase in the number and tonnage of vessels cleared and the

**VESSELS ENTERING AND LEAVING BOSTON PORT
DURING 1920**
(Offshore Trade Only)

Months	—ENTERED—		—CLEARED—	
	No. Ships	Net Tonnage	No. Ships	Net Tonnage
January	26	66,829	17	54,203
February	23	68,344	8	19,227
March	24	86,755	15	39,079
April	38	111,719	21	43,726
May	31	60,204	28	34,472
June	58	109,204	44	40,906
July	62	113,337	56	53,820
August	85	122,019	59	55,394
September	64	107,212	52	49,801
October	50	97,841	41	56,652
November	50	97,044	34	57,121
December	38	88,103	39	76,796
Total	549	1,128,611	414	589,197

American Registry

Months	—ENTERED—		—CLEARED—	
	No. Ships	Net Tonnage	No. Ships	Net Tonnage
January	27	74,297	23	49,203
February	23	55,878	16	36,296
March	36	84,031	21	48,438
April	46	68,777	47	74,498
May	54	64,466	53	52,964
June	62	88,932	44	74,688
July	49	99,617	31	70,879
August	48	113,687	24	69,249
September	35	103,284	27	73,244
October	32	84,187	31	59,285
November	29	96,389	18	49,991
December	28	90,553	12	51,643
Total	469	1,024,098	333	710,448

total tonnage represented by the entered and cleared figures of all vessels was practically equal to that of November. A sharp drop was noticeable in the amount of bunker coal furnished to ships, but fuel oil held about the same as for November. The average fuel oil price dropped from \$2 in November to \$1.90 in December.

Pittsburgh River Traffic

Falling off of one quarter million tons was shown in the river traffic of Pittsburgh during the month of November. The aggregate movement was 2,391,437 tons as compared with 2,768,770 tons in the month of October.

Coal, as usual, led the port's river

Marine Business Statistics Condensed

traffic, a total of 1,746,855 tons being moved. Of this amount 1,600,965 tons was carried on the Monongahela river. For movement to points on the Ohio and Alleghany rivers, as well, coal showed the greatest tonnage in November.

The movement for October, in tons, follows:

Commodity	Allegheny	Monongahela	Ohio
Coal	100,040	1,600,965	245,850
Coke		18,700	
Gasoline	1,900	1,300	600
Gravel	98,345	81,310	4,830
Sand	69,586	63,655	12,400
Miscellaneous	4,473	49,444	34,193
Packet cargo			3,846
Total	274,344	1,815,374	301,719
Grand total, November		2,391,437	

Soo Canal Report

Detailed analysis of the commerce through the Soo canal up to Jan. 1, 1921 and 1920, follows:

	EASTBOUND	To Jan. 1, 1921	To Jan. 1, 1920
Lumber, M feet B. M....		192,854	224,146
Flour, bushels.....		7,477,533	8,087,554
Wheat, bushels.....		143,456,487	113,734,848
Grain, bushels.....		51,630,135	52,734,345
Copper, net tons.....		51,545	58,409
Iron ore, net tons.....		56,642,679	46,785,477
Pig iron, net tons.....		557	3,857
Stone, net tons.....		66,944	52,012
General merch., net tons..		56,356	64,037
Passengers, number.....		34,013	28,393
	WESTBOUND		
Coal, soft, net tons....		12,096,993	11,461,962
Coal, hard, net tons....		2,059,268	2,412,989

Iron ore, net tons.....	137,819	137,315
Mtd. iron and stl. net tons	75,637	113,856
Salt, net tons.....	99,208	93,893
Oil, net tons.....	353,489	387,023
Stone, net tons.....	496,327	319,158
General merch., net tons..	499,754	478,141
Passengers, number.....	34,438	28,599

SUMMARY

Vessel passages, number..	18,847	17,587
Registered tonnage, net..	58,194,083	50,089,090
Freight		
Eastbound, net tons.....	63,464,003	52,831,205
Westbound, net tons....	15,818,493	15,404,337
Total freight, net tons..	79,282,496	68,235,542

The ZEBEDEE E. CLIFF, built for the East Coast Ship Co. and to be managed by Crowell & Thurlow, Boston, was launched recently from the East Coast Shipyard, East Boothbay, Me. She is a 1450-ton schooner.

Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties—
A Record of Collisions, Wrecks, Fires and Losses

NAME OF VESSEL	DATE	NATURE	PLACE	DAMAGE RESULTING	NAME OF VESSEL	DATE	NATURE	PLACE	DAMAGE RESULTING
Annie Hanify	Dec. 9	Disabled	San Francisco	Mach. trouble	City of Hankow	Dec. 10	Lost anchor and chain	Off Boston	Not stated
Anacortes	Dec. 13	Disabled	Permuda	Steerer trouble	Coquit	Dec. 13	Disabled	Off Boston	Not stated
Anna G. Lord	Dec. 14	Abandoned	At sea	Total loss	Celtic Prince	Dec. 12	Disabled	Charleston	Mach. trouble
Andrea F. Luckenbach	Dec. 6	Disabled	Falmouth	Condenser trouble	Caloussa	Dec. 11	Disabled	Shanghai	Not stated
Annie B. Anderson	Dec. 11	Grounded	Tortola	Total loss	Canooconk	Dec. 19	Cargo shifted	At sea	Not stated
Alice M. Colburn	Dec. 19	Disabled	Barbados	Not stated	Comanche	Dec. 19	Collision	Off Liberty	Not stated
Atlas	Dec. 20	Grounded	Snow Pass	Leaking	Cambridge	Dec. 20	Disabled	St. Michaels	Lost blades
Afel	Dec. 23	Collision	Falmouth	Propeller damaged	Chicago City	Dec. 18	Heavy weather	At sea	Slight
Aleppo	Dec. 25	Collision	Flushing	Not stated	C. S. Holmes	Dec. 11	Collision	Astoria	Slight
Avon Queen	Dec. 26	Disabled	Baria Blanca	Leaking	Canadian Pioneer	Dec. 28	Bunker coal fire	Colombo	Not stated
Agram	Dec. 17	Heavy weather	Off Boone Island	Not stated	Cripple Creek	Dec. 31	Grounded	Valencia	Not stated
Aggravimoon	Dec. 24	Grounded	Off St. George's Ferry	Not stated	Capulin	Jan. 4	Disabled	Off Cape Henry	Short fuel
Anagir	Dec. 23	Grounded	Moun's Bay	Heavy	Don Parsons	Dec. 15	Disabled	Bermuda	Not stated
Aschenburg	Dec. 23	Grounded	Galveston	Not stated	Dade County	Dec. 16	Fire	New Orleans	Heavy
Amy G. McKean	Dec. 20	Disabled	Lizard	Not known	Dillwyn	Dec. 16	Fire	New Orleans	Heavy
Agapi	Dec. 30	Disabled	Key West	Boiler trouble	Dora	Dec. 22	Grounded	Noble Island	Not stated
Aryan	Jan. 3	Disabled	New York	Lost blade	Dauperata	Dec. 28	Short fuel and water	Off Norfolk	None
Asabeth	Jan. 3	Grounded	Fredrikstad	Not stated	Edward Smith	Dec. 18	Disabled	Key West	Pump trouble
Banyei Maru	Nov. 30	Collision	Off Mobile Bar	Slight	Edgar F. Luckenbach	Dec. 18	Grounded	Isle of Wight	Not stated
Belvidere	Dec. 11	Bunkers afire	At sea	Lost blade	Ednor H.	Dec. 20	Disabled	Sydney	Leaky
Benoni	Dec. 15	Disabled	Gibraltar	Not stated	Fdel	Dec. 20	Heavy weather	At sea	Not stated
Blue Triangle	Dec. 16	Grounded	Lagos harbor	Not stated	Eastern Temple	Dec. 23	Fire	Callao	Damaged rudder
Bavington	Dec. 16	Fire	New Orleans	Heavy	Evansville	Dec. 19	Disabled	Off Sandy Hook	Total loss
Bound Brook	Dec. 8	Disabled	Queens town	Lost rudder	Emma Belliveau	Dec. 14	Foundered	At sea	None
Black Arrow	Dec. 5	Disabled	Ambrose channel	Steerer trouble	Fika III	Dec. 23	Short fuel	Key West	Not stated
British Peer	Dec. 11	Short fuel	Key West	None	Edward Trevo	Dec. 27	Grounded	Off Weymouth	Not stated
Bertie Minor	Dec. 12	Lost sails	Honolulu	Not stated	Eastern Crag	Dec. 24	Grounded	Ambrose channel	Not stated
Betterton	Dec. 18	Collision	Off Stapleton	Not stated	FI Occidente	Dec. 23	Fire	Galveston	Not stated
Bertha	Dec. 16	Struck bridge	Neches river	Lost rudder	Euphrates	Dec. 30	Missing	Off Newfound-land coast	Not known
Bilbater	Dec. 23	Collision	Off Greenville	Bow stove in	Elsie L. Corkum	Dec. 28	Abandoned	At sea	Total loss
Bango	Dec. 17	Heavy weather	Off Boone Island	Rudder damaged	Eastern Soldier	Dec. 25	Disabled	Rotterdam	Broken shaft
Bolikow	Dec. 23	Explosion	Galveston	Total loss	Freedom	Dec. 13	Collision	New York harbor	Heavy
Bremen	Dec. 27	Collision	Flushing	Heavy	Farnam	Dec. 14	Disabled	Leixoes	Mach. and boiler trouble
Bali	Dec. 28	Disabled	At sea	Tail shaft broken	Faustino R. San Pedro	Dec. 6	Disabled	Bermuda	Funnel and mach. trouble
British Vine	Dec. 30	Disabled	Off Ireland	Not stated	France	Dec. 4	Collision	New York harbor	Not stated
Broadmayne	Jan. 2	Grounded	Dartmouth	Not stated	Faxen	Dec. 28	Collision	Off Hanstholm	None
Bradburn	Jan. 2	Disabled	Fayal	Main steampipe broken	Fukuyo Maru	Dec. 28	Disabled	Gibraltar	Mach. trouble
Claudia	Nov. 27	Heavy weather	Las Palmas	Sails torn, motor trouble	Faraby	Jan. 3	Grounded	St. Michaels	Not stated
Canadier	Dec. 15	Damaged hull	Bermuda	Not stated	Grace P. Brown	Dec. 3	Disabled	Bay of Islands	Leaking, lost rudder
Conceias	Dec. 15	Struck dock	Bordeaux	Heavy	Giant King	Dec. 6	Grounded	Off Ambergria Cays	Not stated
Canadian Squatter	Dec. 11	Heavy weather	At sea	Lost part deck load	Guliford D. Pendleton	Dec. 2	Disabled	Bermuda	Lost sails
Coskata	Dec. 10	Disabled	St. Johns	Main steampipe broken	Grof Serenyi Bela	Dec. 13	Grounded	Off Kallendborg	Not stated
Commandant Roquigny	Dec. 8	Disabled	St. Johns	Boiler trouble					
Castle Point	Dec. 6	Disabled	St. Johns	Steerer trouble					

Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties—
A Record of Collisions, Wrecks, Fires and Losses

NAME OF VESSEL	DATE	NATURE	PLACE	DAMAGE RESULTING	NAME OF VESSEL	DATE	NATURE	PLACE	DAMAGE RESULTING
Grelcaldy	Dec. 20	Collision	Panama	Not stated	Nay Aug	Dec. 28	Collision	Boston	Sank
General Horne	Dec. 20	Missing	Off Newfoundland coast	Not known	Neshaminy	Jan. 4	Disabled	Pernambuco	Boiler trouble
Genevieve	Dec. 18	Abandoned	Off Briar Island	Total loss	Opelika	Dec. 19	Disabled	Horta	Not stated
Georges Creek	Dec. 24	Fire	Boston	Not stated	Oiavarria	Dec. 29	Disabled	At sea	Not stated
Genoa Maru	Dec. 29	Collision	Boston	Not stated	Ozaukee	Jan. 1	Disabled	Off Brest	Engine trouble
Gardiner G. Deering	Dec. 26	Cargo afire	Santos	Not known	Outiz	Jan. 2	Foundered	Off Cape Hatteras	Total loss
Harriet	Dec. 10	Grounded	St. Johns	Total loss	Pearl Cullen	Dec. 14	Grounded	Off Grass Island	Heavy
Hahira	Dec. 16	Disabled	Baltimore	Steerer trouble	Provincetown	Dec. 12	Lost blade	At sea	Slight
Hatchie	Dec. 10	Disabled	St. Michael's	Boiler trouble	Perry Setzer	Dec. 16	Grounded	Jacksonville	Pumps damaged
Havur	Dec. 5	Disabled	At sea	Steam pipe burst	Polar Star	Dec. 13	Grounded	Off Hamburg	Engine trouble
Hackensack	Dec. 13	Disabled	Beaufort	Rudder trouble	Pontia	Dec. 16	Bearing trouble	New York	Slight
Hoboken	Dec. 13	Disabled	Fayal	Shaft and steerer trouble	Paipoonge	Dec. 10	Heavy weather	At sea	Heavy
Hulaco	Dec. 4	Disabled	At sea	Not stated	Preceptor	Dec. 8	Grounded	Black Ledges	Not stated
H. K. Waage	Dec. 22	Short coal	St. Johns	None	Principessa Cristiana	Dec. 19	Disabled	Milazzo	Cylinder piston broken
Hagan	Dec. 22	Disabled	Port Lobos	Mach. trouble	Prusa	Dec. 23	Grounded	Alicante	None
Hutchinson	Dec. 28	Disabled	Falmouth	Lost propeller	Pequonnock	Dec. 24	Grounded	Boston	Not stated
Horda	Dec. 26	Disabled	St. Johns	Propeller trouble	Prentiss	Dec. 20	Disabled	Pigeon Point	Lost propeller
Hastoral	Dec. 23	Fire	Galveston	Not stated	Poleric	Jan. 3	Disabled	St. Michael's	Mach. and boiler trouble
Horace E. Munroe	Dec. 21	Disabled	Fayal	Damaged sails	Quality	Nov. 29	Fire	Brooklyn	Not stated
Haslehurst	Jan. 3	Disabled	Horta	Boiler trouble	Quaco Queen	Nov. 30	Collision	Off Mobile Bay	Headgear carried away
Haimon	Jan. 3	Disabled	At sea	Not stated	Quevilly	Dec. 30	Grounded	Off Dunkirk	Not stated
Inland	Dec. 13	Collision	Portland	Heavy	Riverside Bridge	Dec. 14	Disabled	At sea	Engine trouble
Inca	Dec. 16	Disabled	At sea	Dismasted, waterlogged	Romsdalsjord	Dec. 10	Grounded	Sambro Ledges	Broke in two
Indianola	Dec. 19	Disabled	Bermuda	Propeller trouble	Red Mountain	Dec. 18	Disabled	At sea	Boiler trouble
Iowan	Dec. 20	Grounded	Off Gloucester	Not stated	Robert H. McCurdy	Dec. 18	Abandoned	At sea	Total loss
Isotta	Dec. 23	Disabled	St. Michael's	Engine trouble	Rockport	Dec. 1	Disabled	Jacksonville	Boiler trouble
Impressive	Dec. 16	Grounded	Bahamas Bank	Breaking up	Ronald	Dec. 22	Fire	St. Andrew's Bay	Total loss
Invincible	Dec. 28	Fire	New York	Not serious	Roberta Ray	Dec. 22	Disabled	Channel	Not stated
Inocencio Figaredo	Dec. 29	Grounded	Off Tortugas	Not stated	Robert R. Hind	Dec. 3	Heavy weather	At sea	Split sails, rigging carried away
Indianapolis	Jan. 4	Disabled	Pernambuco	Boiler trouble	San Pablo	Dec. 13	Grounded	Havana harbor	Cargo damaged
James Rolph	Dec. 13	Collision	Newcastle	Not stated	Shooters Island	Dec. 16	Grounded	Off Smiths Island	Not stated
John Adams	Dec. 16	Fire	New Orleans	Heavy	Sierra Nevada	Dec. 16	Collision	Constable Hook	Broken blade
John M. Connelly	Dec. 9	Dragged anchor	Off Stapleton	None	Sypla	Dec. 11	Disabled	At sea	Dismantled
J. R. Gordon	Dec. 9	Collision	Port Arthur	Rent blade	Som	Dec. 9	Disabled	Hollvarde	Not stated
J. W. Van Dyke	Dec. 12	Grounded	Off Eddystone	Not stated	Suez Maru	Dec. 9	Shifted cargo	Port Said	Cargo damaged
Jane Palmer	Dec. 18	Abandoned	At sea	Total loss	Sarcoux	Dec. 10	Grounded	Quillebouef	Not stated
Joaziero	Dec. 21	Disabled	Fayal	Not stated	Sarony No. 94	Dec. 9	Collision	Port Arthur	Not serious
Joas Johnson	Dec. 19	Dragged anchor	Off Miggs Wharf	Lost anchor and chain	Samuel W. Hathaway	Dec. 18	Collision	Off Stapleton	Slight
John Pierce	Dec. 26	Foundered	Gulf of Mexico	Total loss	Sandland	Dec. 21	Grounded	Off Gothenburg	Leaking
John V. Craven	Dec. 28	Collision	New York	Sank	Shenadoah	Dec. 21	Grounded	Mobile	Not stated
Kenwood	Dec. 10	Heavy weather	Bermuda	Heavy	Sussex	Dec. 23	Grounded	Navy Island	None
Knoxville	Dec. 8	Grounded	Houston channel	Not stated	Stavangeren	Dec. 23	Collision	Off Greenville	Bow stove in
Kewanee	Dec. 23	Short supplies	Key West	None	Svea	Dec. 18	Heavy weather	At sea	Lost deckload
Koranaes	Dec. 29	Fire	Charleston	Not stated	Siddons	Dec. 28	Fire	Bahia	Serious
Kroonland	Dec. 28	Short fuel	New York	None	Santa Monica	Dec. 25	Disabled	San Francisco	Engine trouble
Keilehavn	Jan. 2	Disabled	Newport News	Rudder broken	Susquehanna	Jan. 1	Disabled	St. Michael's	Boiler trouble
Lake Freeland	Dec. 1	Disabled	Mobile	Engine trouble	Santa Isabel	Jan. 2	Grounded	Salvera Island	Total wreck
Lake Conesus	Dec. 11	Grounded	Off Sabine Bar	Not stated	Tamaulipas	Dec. 10	Grounded	Aberdeen harbor	Not stated
Lake Fontanet	Dec. 13	Disabled	At sea	Boiler trouble	Titan	Dec. 8	Grounded	Rotterdam	Not stated
Lake Elva	Dec. 13	Disabled	St. Michael's	Lost blades	Tollard	Nov. 29	Disabled	Bizerta	Turbine trouble
Louisa M.	Dec. 8	Grounded	Off Norfolk	Not stated	Turret Court	Dec. 6	Disabled	St. Johns	Engine trouble
Lake Singara	Dec. 11	Disabled	Key West	Propeller trouble	Trinculo	Dec. 4	Disabled	Bermuda	Boiler trouble
Ludvig	Dec. 13	Dragged anchor	Malaga	Grounded	Topa Topa	Dec. 19	Disabled	At sea	Pump trouble
Lackawanna Valley	Dec. 20	Leaking	Hansburg	Not stated	Union Jack	Nov. 30	Disabled	St. Johns	Foregaff broken
Lake Marion	Dec. 23	Fire	New York	Not serious	Urania	Dec. 26	Disabled	Honolulu	Engine trouble
Lloyd George	Dec. 20	Foundered	Horseshoe Reef	Total loss	Victoria	Dec. 13	Explosion	Seattle	Three killed
Lakeside Bridge	Dec. 29	Grounded	Pico Island	Total loss	Vesta	Dec. 9	Collision	Port Arthur	Not stated
Lake Allen	Jan. 3	Disabled	Off Atlantic City	Pumps broken	Venada	Dec. 18	Short coal	New York	None
Matinicok	Dec. 6	Short fuel	Key West	None	Venusia	Jan. 1	Heavy weather	At sea	Lost blade
Melville Dollar	Dec. 6	Heavy weather	At sea	Lost deckload	West Wauncke	Dec. 6	Disabled	At sea	Short fuel
Maside	Dec. 15	Grounded	Beaufort Bar	Total loss	Westfield	Dec. 13	Bunker coal afire	Biera	Not stated
Manhanna	Dec. 17	Disabled	Off Cape Hatteras	Leaking	Wm. H. Smith	Dec. 13	Collision	Newcastle	Not stated
Marion J. Smith	Dec. 8	Abandoned	At sea	Total loss	Wm. E. Litchfield	Dec. 3	Grounded	Marquesa	Leaking
Miller Country	Dec. 21	Disabled	Sandy Hook	Steerer trouble	West Katon	Dec. 6	Struck wharf	Glasgow	Damaged plates and frames
Moerdijk	Dec. 11	Collision	Astoria	Slight	West Jena	Dec. 12	Leaking	Honolulu	Not stated
Merwede	Dec. 22	Disabled	Portland	Slight	West Imboden	Dec. 20	Disabled	Off Scilly Island	Engine trouble
Mabel Gale	Dec. 22	Heavy weather	At sea	Lost deckload	West Amargosa	Dec. 20	Disabled	New York	Condenser trouble
Malden	Dec. 22	Heavy weather	At sea	Deck and rudder damaged	Wauwatosa	Dec. 27	Collision	Flushing	Stem stove in
Manchuria	Dec. 22	Collision	Hamburg	None	West Hargrave	Dec. 27	Disabled	At sea	Steerer broken
Maria A. Homes	Dec. 27	Disabled	Bermuda	Lost sails	Westwood	Dec. 22	Disabled	At sea	Not stated
Mount Clay	Dec. 26	Disabled	Halifax	Pump trouble	William Isom	Dec. 30	Disabled	Jacksonville	Not stated
Marieholm	Dec. 28	Collision	Off Hanstholm	Sank	West View	Dec. 27	Disabled	Rotterdam	Steerer trouble
Newton	Dec. 1	Fire	New York	Slight	West Galoe	Dec. 18	Disabled	Rio de Janeiro	Valve trouble
Noccalula	Dec. 2	Disabled	Bermuda	Boiler trouble	West Wind	Dec. 29	Fire	Brooklyn	Not stated
Northwestern Bridge	Dec. 5	Grounded	Rotterdam	Mach. damaged	W. D. Crawford	Dec. 14	Grounded	North Point	Leaking
No. 16	Dec. 6	Heavy weather	At sea	Missing	Yana	Nov. 30	Disabled	Kuril Island	Not stated
No. 39	Dec. 6	Heavy weather	At sea	Missing	Yellowstone	Dec. 16	Heavy weather	St. Michael's	Grounded
Navarino	Dec. 23	Fire	At sea	Heavy					
Nils Uner	Dec. 27	Disabled	Ferrol	Main steam pipe broken					
Nieuw Amsterdam	Dec. 28	Collision	New York	Not stated					

First Motor Ship for Alaska Run

West Coast Company Takes First Step Away
from Steam-Driven Craft—Built in Seattle Yard

WHEN the keel of the motorship KENNECOTT was placed on the blocks Nov. 1 by the Todd Dry Dock & Construction Corp., Seattle, it marked the initial step by the Alaska Steamship Co. in getting away from steam-driven craft.

There have been other motorships built in the northwest, but Tacoma is now seeing the first steel ship constructed north of San Francisco that will derive its propulsion from diesel engines. Intended for service wherever business will warrant, the KENNECOTT is being built and equipped to carry maximum cargo on long trips with minimum fuel and operating expense. The necessity for steam in any form, has been obviated by the adoption of electricity as the motive power for all deck and auxiliary engine room equipment. The electric power will be derived from diesel engine generator sets.

In arranging the quarters, special consideration was given the crew's quarters and care has been taken to provide the men with comforts seldom seen on any ship. The space in the extreme ends of the ship, usually allotted for crews quarters, will be used for storerooms only. The entire crew will be housed in quarters amidships. Several bath rooms, a hospital and a smoking room for officers are among the features.

To heat the living quarters, air which has been heated by contact

with exhaust pipes will be circulated through the rooms. Each room will be provided also with an electric heater, which can be used when hot air is not available. The galley will be fitted with an oil burning range, while each mess room will have an electric hot plate, coffee urn and warming table.

A storage battery for emergency lighting and source of power for emergency compressor will be carried. For number signalling an air whistle, operated from the maneuvering tanks through a reducing valve, will be used. For use during foggy weather an electric siren will be carried. For the carrying and preserving of the ship's stores a cold storage has been provided equipped with a one ton refrigeration plant.

The vessel will be classed under American Bureau of Shipping and is being built on the Isherwood system. The principal dimensions are:

Overall length, 360 ft.; between perpendiculars, 345 ft.; beam moulded, 49 ft. 6 in.; depth moulded, 26 ft. 9 in.; draft loaded, 22 ft.; deadweight tons, 6000.

When the ship is in South American trade, lumber will form the bulk of the cargo south and to handle this class of freight rapidly, the hatches are to be very spacious, their dimensions being 18 x 28 feet.

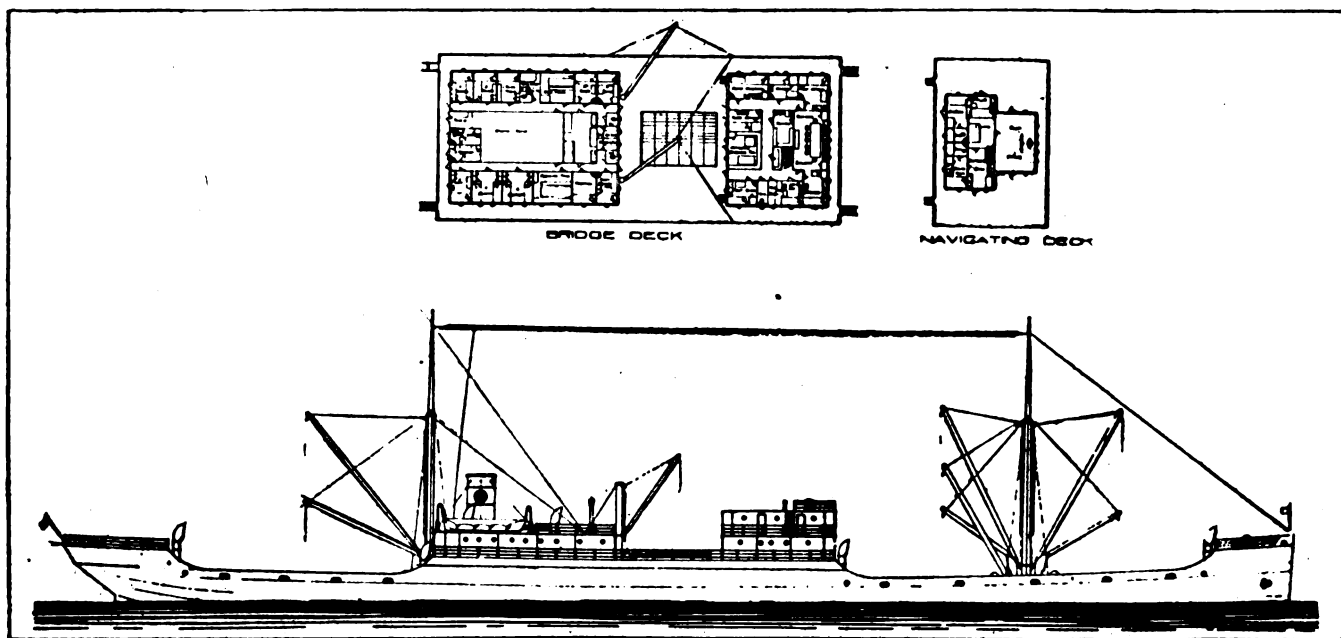
The propellers will be three bladed sectional bronze type and each will

be driven by a 6-cylinder, 900 B. H. P. 140 revolution, cross-head type diesel engine. The estimated speed will be 11 to 11½ knots when fully loaded. The auxiliary engines will be 2-cylinder, 100 horsepower, full diesel direct connected to 70 K. W., 115 volt generators.

Lubricating, fuel oil transfer, bilge and circulating pumps all are provided in duplicate. In addition, a 3-stage, centrifugal, high pressure pump will be installed. A well equipped machine shop is being provided so that all ordinary repairs can be done aboard ship.

No special fuel oil will be used. Californian residuum or Mexican crude will be used in all engines. That this low grade oil be successfully used, it is necessary to raise its temperature to approximately 200 degrees Fahr. In order to accomplish this the daily service tanks will be fitted with coils for circulating water heated by the exhaust gases. The water is heated in coils placed in the silencers and stored in a tank placed in the stack. Hot water will be circulated also around the oil-pump suction in the double bottom tanks to facilitate pumping.

The estimated oil consumption of the KENNECOTT at sea is 54 barrels per day; the in-port consumption 7 barrels. All fuel oil will be carried in double bottoms at 900 tons capacity, enough to allow the ship to travel approximately 26,000 miles.



6000-TON MOTORSHIP KENNECOTT, BUILT FOR THE ALASKA STEAMSHIP CO.

World Charter Market Reviewed by

MARKET SLUMPS

Ocean Rates Now Down Practically to Prewar Levels — Shipping Men Feel Bottom Has Been Found

DECEMBER marked a further slump in freight rates and a stagnant charter market. But as the quotations approached the prewar level of charges for ocean services there appeared to be a slight hardening of rates. Steamship people are, nevertheless, extremely pessimistic over the situation, as they are unable to foresee any approaching change in the outlook. Anticipations run high, but the market would have to improve materially before the steamship companies could expect fair profits on their properties. Coal rates to French Atlantic ports have gradually neared the \$4 mark with decreases in rates on other routes proportionately low. Some improvement was anticipated from the movement of grain, but this failed to materialize as soon as expected. The market over the holiday season at the end of the year was at about the lowest ebb that has existed since 1914.

Liner tonnage has been compelled to leave port with but part cargoes and tramp steamers have been hard hit. Many companies, which purchased tonnage from the shipping board upon the deferred payment plan, were hard pressed and some of these began to go into the hands of receivers. Steamships usually using Philadelphia have come to New York to look for part cargoes and have been forced to depart without finding them.

Depression in the trade in and out of Boston has continued.

No improvement in the charter market can be expected until commodity prices become more stable, and it is not expected that even that stability will do much good until a reassuring international credit condition is brought about. There has been some chartering of sail tonnage, but steamers have been offered without takers.

Would Enter Conference Agreements

The slump in business has brought about a better understanding among the steamship operators, it appears. All lines in the Black sea business have at last entered the conference on rates. The Belgian line, through a statement issued last month, intimated it was ready to rejoin the transatlantic conference. It was the Belgian line, which withdrew last summer from this conference when the French line refused to do business with shipping board operators. Today the rates to Belgian and French Atlantic ports are the lowest. Conference rates on liners have been holding fairly constant.

But many of the new companies are in no position to weather the present slump. The Marine & Commerce Corp. has decided to liquidate. The Italian Star Line, Inc., has been placed in the hands of a receiver, upon petition of the shipping board, which

presented claims for payments due on a ship purchased from the government. Similar action was taken against the American Star Line, Inc., by the shipping board. These businesses will be continued by the receivers in the hope a new basis can be reached ultimately whereby the services of the lines will not be discontinued.

Although the new shipping board now has been organized over a month, it has accomplished nothing and attempted to do little to meet present emergencies. To congress, the board reported it has received a profit from operations of \$251,000,000, since the beginning of the government fleet; but that sum does not take into consideration a loss of \$513,000,000 on account of such bookkeeping items as insurance, depreciation and items connected with war activities. At the instance of the board, a model marine insurance bill has been introduced in congress. This would permit multiple forms of insurance, change taxation from gross premiums to profits.

On the other hand, however, steamship men are considerably perturbed over the contemplated action of the board to regulate charters, especially the charter of American vessels to foreigners. It is felt a more liberal attitude must be displayed toward American operators if they are to weather the depression.

Plans of American Interests

Fitting in with the depressive spirit of the times, shipping circles heard last month that the U. S. Mail line had encountered difficulties with the shipping board and was on the point of repudiating a part of its contract for the government ships. If trouble there was, it appears to have been tided over as the line has accepted delivery of the PRINCESS MATOIKA and booked her for inauguration of a cabin and third class passenger service between New York and the Mediterranean ports. This line is to take over also the CALLAO, which has been operated by the Munson line in the South American service, and the AN-TIGONE and the PRESIDENT GRANT. The International Mercantile Marine has abandoned its plans to send the two American line steamers, ST. PAUL and NEW YORK, on Caribbean cruises. It is reported they will be tied up until spring. With the sailing of the MOUNT CLAY on Christmas day, the United American line inaugurated its third class services to

Marine Society to Meet

SHIPPING and foreign trade will be represented by a number of its most prominent figures at the annual convention of the National Merchant Marine association in Washington, Jan. 20 and 21. Formulation of a shipping policy in which all foreign trade interests can unite is the prime object of the gathering. A number of members of congress will be in attendance, including Senator Jones, author of the shipping act. P. A. S. Franklin, W. A. Harriman, Frank C. Munson, Homer L. Ferguson, Charles M. Schwab and Charles Piez, will be among the speakers on marine problems to come under discussion. They will offer suggestions for solving present marine problems.

Experts in This Country and Abroad

New York and Hamburg. Five other steamers will be added soon and by spring the line will be maintaining a weekly service. The United American line is also booking the KERKENNA for service between New Orleans and Hamburg.

The Atlantic Fruit Co. announces the opening of new services to Santo Domingo City, Azua, San Pedro de Macoris, Barahona, Samana bay and Puerto Plata, according to J. A. McNaught, general freight agent of that line. With the use of shipping board tonnage, the Seager Steamship Co. is starting a service from New York to Irish ports the MONANA being the first ship to sail for Cork, Dublin, Belfast and Limerick. A. D. Cummins & Co. are inaugurating a service from Philadelphia to Cuban ports, also to Porto Rico and Jamaica. The Five Continent Steamship Co. has leased a pier at New York for its services to Mexican ports as well as for its regular services to Guatemala and Colombia.

The Eagle Oil Transport Co. plans doubling its tonnage holdings. With the building program now in hand completed, it is estimated American operators will own approximately 54 per cent of the world's tank ships, and England 35 per cent. Owners of tank tonnage are anticipating a prosperous future business.

Foreigners Plan Many Extensions

Moore & McCormack will be the American agents for the Svendka Lloyd, the Swedish steamship company, which will inaugurate regular freight services to Spain, North Africa, Mexico and Black Sea ports from New York. The Canadian Government Merchant Marine, Ltd., is sending the CANADIAN PLANTER this month from St. John in the new service to Australian ports. During the summer months this line will clear from Montreal. The Houston line is establishing a service from Halifax to east coast South American ports.

Probably the most important announcement of the

Urges Sale of Ships

ONE shipping board member finally has accepted the sound economic policy of fixing a selling price for its ships commensurate with the replacement cost of new tonnage under present conditions. In a plan formulated by Guy D. Goff, commissioner for the Great Lakes district, and concurred in by Martin Gillen, special assistant to Admiral W. S. Benson, chairman of the board and others, it is proposed to fix definitely the base selling price of the board's boats at \$45 per dead-weight ton, plus 50 per cent. It is proposed, also, that previous sales be recalled and sales made on the new basis of prices. Mr. Goff has placed his plan before the other board members and congressmen.

past month was to the effect that the Royal Mail Steam Packet Co. will enter the transatlantic passenger trade this year. The firm of Sanderson & Son will be incorporated and taken over by the British company and set up as its American agents. The Cunard line has entered into an arrangement with the Hungarian government for the transport of immigrants be-

SLOW ON PACIFIC

Trade Out of West Coast Ports Is at Low Ebb—Downward Revision of Conference Schedules Is Effected

tween Trieste, Cherbourg, Rotterdam, Hamburg and the United States. The agreement is only for the year 1921.

Furness, Withy & Co. are establishing a New York-Halifax-London-Newport freight service, beginning with the steamer ROYAL PRINCE. A regular passenger and freight route between Libau and New York, with Danzig as a port of call, will be opened by the United Baltic Corp., a British company. Dutch promoters have organized the Netherlands Co. for Navigation, Trade and Industry. This embraces the Netherlands interests of the Furness Shipping & Agency Co., R. S. Stokvis & Sons, as well as a number of industrial and commercial concerns. Among the subsidiaries are included the South Holland Navigation Co., the Nieuwe Waterweg Shipbuilding Co. and many other smaller shipping and trading enterprises in Holland. The Lloyd Real Holendesa has purchased several vessels for service between Amsterdam and Vera Cruz. The Holland-Amerika line will institute triweekly service from European ports to Vancouver, Seattle, Portland and San Francisco this year.

The Hamburg-South American line has re-established its cargo services between Hamburg and Buenos Aires. The Gulf line is opening a new line between Hamburg and ports on the west coast of South America via the Straits of Magellan. The German-Costa Rica Steamship line of Hamburg has increased its capital stock. A regular passenger and freight service from New York to the Azores, Maderia and Lisbon is to be started by the Portuguese line, with the use of two reconditioned ex-German passenger steamers, the SAN JORGE and the SAN VINCENTE. The Portuguese government has organized the Transportes Maritimos do Estado to operate between Brazil and Portugal.

Commerce on Pacific Now at Low Ebb

Ocean commerce on the Pacific is at low ebb and the charter rates are badly depressed. Under present conditions, foreign buyers are holding off in the hope of lower commodity prices and ocean freights. Chartering has been inactive during the past month and business is practically at a standstill.

Owing to lack of business, additional shipping board carriers have been withdrawn from service. At Seattle and San Francisco a score of these vessels are idle awaiting improvement in conditions. The regular lines to the Orient are operating only to part capacity and the situation has been so unattractive that tramp vessels are an extreme rarity.

There still remains in the country a large amount of grain yet to be exported from Pacific ports; but the farmers are holding back in the hope of obtain-

ing better prices. In consequence, little demand has developed for wheat and flour tonnage. Recent charters for foodstuffs have shown declining rates. Since a month ago, the shipping board rate has dropped from \$20 to \$18 to United Kingdom and continental ports, while foreign vessels are taking business at considerably under this figure. A spot foreign steamer was fixed at 95 shillings, equal to about \$16.45, while foreign tonnage is now offering on a basis of 90 shillings.

Lowering freights in other lines also are indicated by recent fixtures. While the conference rate on lumber to the United Kingdom has dropped from \$60 to \$50, no lumber now is moving in that direction. A shipping board vessel recently was taken for railroad ties from the Columbia river to the United Kingdom at \$35, a drop of \$5 in a month.

Movement of Ties to N. Y. Now Active

Fairly active movement of railroad ties from north Pacific ports to New York and Philadelphia continues although the Atlantic is buying no Pacific coast lumber. Lumbermen claim the conference water rate of \$25 has shut them out of the Atlantic market.

However, in an effort to stimulate lumber, the water lines have cut lumber to \$22.50. The tie rate to Atlantic has been cut to \$18.

On offshore lumber business, vessels have been taken for Australia at private terms. This indicates a weak market. To the west coast of South America recent fixtures for lumber have been on a basis of \$30. This market is the most promising of any to which north Pacific lumber is shipped; but even in that direction business is extremely dull.

Operators on Pacific Handicapped

Operators of tonnage in transpacific routes realize that they are working under a disadvantage and this is proved by the decrease in the amount of through cargo passing through Pacific coast gateways. It seems that following the increase in rail rates, the land carriers east of the Mississippi did not provide for import and export rates via Pacific terminals. Consequently, practically all cargo intended for the Orient, originating east of Chicago naturally follows the route of lowest transportation cost, which now is via Atlantic gateways. This has proved a serious loss to Pacific carriers and it is intended to begin a campaign for the re-establishment of these through rates.

Conference Rates Are Readjusted

Under a new eastbound conference agreement, reduced rates on rubber, tea and pineapples from the Straits Settlements, applying via Pacific coast ports, have been made effective, following an energetic fight by the Pacific Steamship Co., which established a shipping board line to Singapore several months ago. Under the new tariffs, rubber shipments via Seattle get a preferential of \$4.62½ per ton from Singapore to Akron, O., and other interior manufacturing points as against a former differential in favor of New York at \$11.50. This is expected to stimulate the movement of business through Seattle and other North Pacific ports.

The westbound Pacific conference has adjusted rates on a number of important items, in each case the revision being downward. Lumber was reduced from \$17.50 to \$15, flour was cut from \$10 to \$7, cement

fixed at \$9 against \$10. An experimental rate of \$6.50 was placed on Utah and Wyoming coal, this being supposed to be on a parity with the \$10 rate on British Columbia coal.

These adjustments have cleared the atmosphere with respect to the transpacific business and it is declared all lines are holding to the agreement. However, it is no secret that just prior to the recent meeting several million feet of lumber were booked at \$12 and \$12.50. The Oriental situation is very bad with little cargo offering in either direction. Recently there has been increased inquiry, which indicates to the optimists that the bottom has been reached and an improvement may be expected in the near future.

The disadvantage of exchange, the inability of foreign buyers to finance their purchases and the general worldwide readjustment are the outstanding factors of the charter situation. Low rates have not stimulated business to any extent and operators are simply waiting and hoping for improvement. Until prices begin to rise and the financial atmosphere clears, conditions are not expected to show much promise.

Shipping Dull at Boston

While conditions at the Boston port at the present time are unquestionably dull, there certainly is declared to be no need for undue anxiety. Statistics show the traffic during December kept up to within a few thousand tons of that of November.

Sailings during the month have been made on all of the established lines out of Boston and cargoes, while not of full capacity in many cases, have been satisfactory. The Japanese and Philippine trade showed six clearings during the month with an equal number of vessels entered from that market. Scandinavian trade has held especially firm with grain, machinery, shoes, and automobiles furnishing the principle articles of export.

Export through Boston of autos and parts during the month showed a gradual but consistent increase. The Mediterranean trade fell off some during the past month. The Pacific coast trade has continued to be highly successful, vessels clearing for western ports being consistently well loaded. Nine vessels cleared in this service during the past month. Grain has been passing through Boston for overseas trade in better tonnage than the prewar average.

Leads in Imports of Cotton

The principal imports during the month were hides from South American ports, oil from Mexico, and cotton from Egypt. In this latter commodity, Boston has gained the distinction of exceeding every other port in the world as an importing port of Egyptian cotton. The year's total was 250,016 bales, as compared to 208,198 bales at Liverpool, the second cotton port.

Grain rates have been gradually dropping until at present with 20 cents per hundred pounds prevailing, it is carried at a loss and, as a result, many vessels are being turned back to the shipping board. Warren Transportation Co. recently turned back seven of its shipping board steamers.

Boston gradually is coming to be a more important oil bunker station. The shipping board recently has contracted for its February oil supply at this port, at \$1.90 per barrel. Over 56,008 barrels of oil were taken as bunkers during the past month.

Ocean Freight Rates

Per 100 Pounds Unless Otherwise Stated

		Via Established Lines						Coal from
New York to	Grain	Provisions	Cotton (H. D.)	Flour	General Cargo cu. ft.	100 lbs.	††Finished Steel	Virginia cities
Liverpool.....	\$ 0.25	\$ 1.00	\$ 0.65	\$ 0.45	\$ 0.50	\$ 1.00	\$10.00T	.....
London.....	0.25	1.00	0.65	0.45	0.50	1.00	10.00T	.....
Christiania.....	0.35	0.80	2.00	0.60	0.70	1.50	15.00T	\$7.00T
Copenhagen.....	0.35	0.70	1.50	0.50	0.70	1.50	12.00T	7.00T
Hamburg.....	0.20	0.35	0.50	0.30	0.40	0.80	8.00T	5.50T
Bremen.....	0.20	0.35	0.50	0.30	0.40	0.80	8.00T	5.50T
Rotterdam.....	0.22½	0.35	0.75	0.30	0.50	1.00	8.00T	4.00T
Antwerp.....	0.30	0.35	0.65	0.35	0.45	0.80	7.00T	4.00T
Havre.....	0.27	0.30	0.35	0.32½	0.27	0.40	5.00T	4.75T
Bordeaux.....	0.27	0.30	0.35	0.32½	0.27	0.40	5.00T	4.75T
Barcelona.....	0.75	30.00T	.085	0.80	—30.00T—		18.00T	6.00T
Lisbon.....	0.75	30.00T	.085	0.80	—30.00T—		18.00T	5.00T
Marseilles.....	0.40	1.15	1.25	18.00T	0.70	1.50	15.00T	5.75T
Genoa.....	0.30	1.10	0.75	0.65	0.65	1.20	12.00T	6.25T
Naples.....	0.30	1.10	0.75	0.65	0.65	1.20	12.00T	6.25T
Constantinople.....		28.00T	1.25	16.00T	....	26.00T	18.00T	7.00T
Alexandria.....	0.60	1.25	1.00	16.00T	....	26.00T	18.00T	7.25T
Algiers.....	0.60	1.35	....	18.00T	0.70	1.25	14.00T	6.00T
Dakar.....	23.00T	23.00T	....	23.00T	—23.00T—		20.00T	.....
Capetown.....	30.00T	27.00T	27.00T	30.00T	—27.00T—		20.00T	.....
Buenos Aires.....	....	....	....	....	—20.00T—†		12.00T†	5.00T
Rio de Janeiro.....	....	....	....	....	—22.50T—†		16.50T†	5.50T
Pernambuco.....	....	....	....	....	—23.50T—†		17.50T†	5.50T
Havana.....	0.55*	0.63*	....	0.55*	0.47*	0.94*	0.71*	3.00T
Valparaiso.....	1.25	1.25	1.16	1.16	0.70	1.25	18.00T	5.50T
San Francisco.....	....	1.25	....	0.85	....	....	0.75	.....
Sydney.....	....	....	....	....	25.00 to 30.00T		15.00T	.....

T—Ton. † Landed. †† Heavy products limited in length. *Extra charge for wharfrage.

From North Pacific Ports to	Lumber Per M. ft.
San Francisco.....	\$ 8.50
South California.....	9.50 to 10.00
Hawaiian Islands.....	15.00
New Zealand.....	30.00
Sydney.....	30.00
Melbourne-Adelaide.....	32.50
Oriental ports.....	12.50 to 15.00

From North Pacific Ports to	Flour and Wheat Per Ton
Oriental ports.....	\$ 7.00
United Kingdom.....	18.00
Scandinavia.....	18.00 to 23.00

From North Pacific Ports to	Lumber Per M. ft.
Peru-Chile.....	\$30.00
South Africa.....	42.50
Cuba.....	22.00 to 23.00
United Kingdom.....	50.00
United Kingdom (ties).....	37.50 to 40.00
New York.....	22.50
New York (ties).....	18.00

From North Pacific Ports to	Steel Per Ton
Oriental ports.....	\$11.00

From North Pacific ports to	Cotton Per Ton
Oriental ports.....	\$20.00 to 25.00

Principal Rates To and From United Kingdom

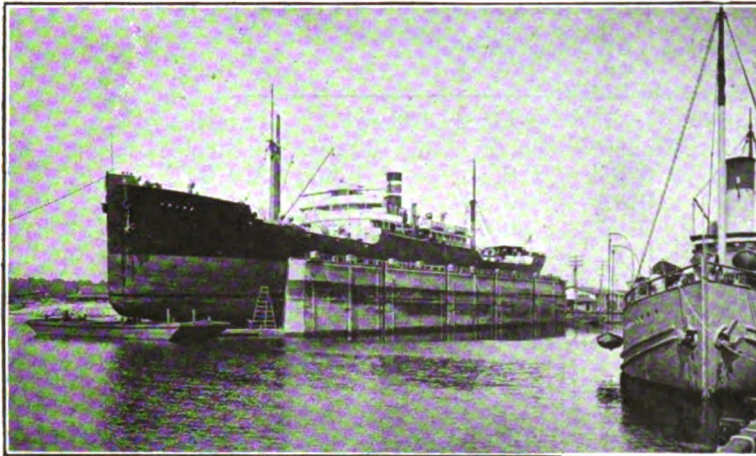
Grain, River Plate to United Kingdom...	s 45	d 0	Iron ore, Bilboa to Middlesborough.....	s 13	d 0
Coal, South Wales to the Near East.....	20	0	General British market, six months time		
Coal, Newcastle to France.....	10	0	charters, per ton per month.....	10	0

Plate Advance Stirs Dull Market

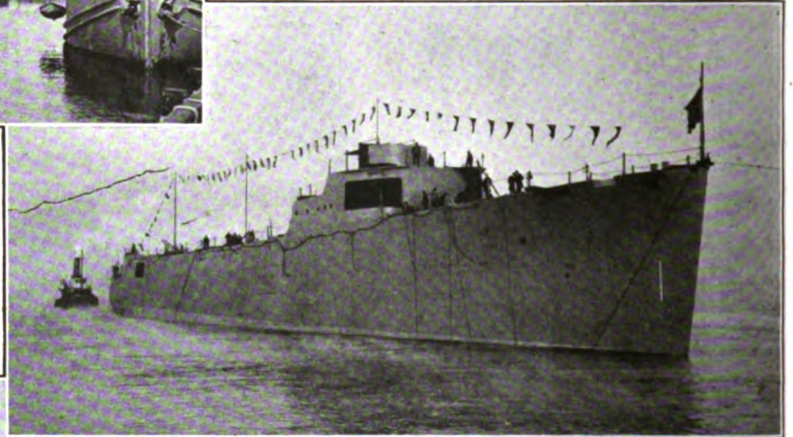
(From Our European Manager)

London, Jan. 10. (By cable)—The new year opens with the charter market thoroughly flattened out. Ship tonnage is available in the greatest volume in many years. Little Far Eastern inquiry has developed either for carrying the seasonal movement of rice or for other commodities. Mediterranean trade is quiet. Less interest is being shown by continental buyers in American and British coal cargoes owing to the increased deliveries now being obtained from Germany. Plate grain is the only bright spot in the market, an advance of 5 shillings having been put into effect. Bilbao ore rates have dropped 5 shillings.

Latest Marine News in Pictures



The United States shipping board's steamer Tripp, 6187 gross tons, in the Crandall 6000-ton floating dry-dock at the Bruce Drydock Co., Pensacola, Fla.



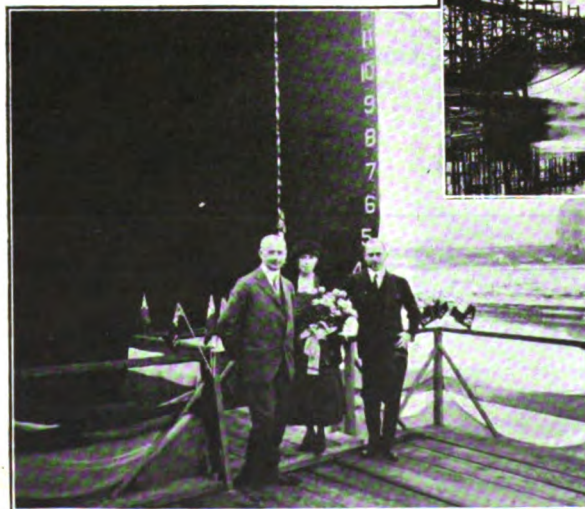
The scout cruiser Omaha, one of the new types of the American navy, was launched Dec. 14, 1920, at the Tacoma yards of the Todd Dry Dock & Construction Co. The illustration shows the Omaha, starboard bow, and a group of company officials who attended the launching.



Miss Louise Bushnell White was sponsor of the scout cruiser Omaha, and others in the group, left to right are: H. W. Kent, treasurer of Todd Dry Docks, Inc.; J. A. Eves, vice president and general manager, Todd Dry Dock & Construction Co.; W. H. Todd, of New York, and C. W. Wiley, president of the company.

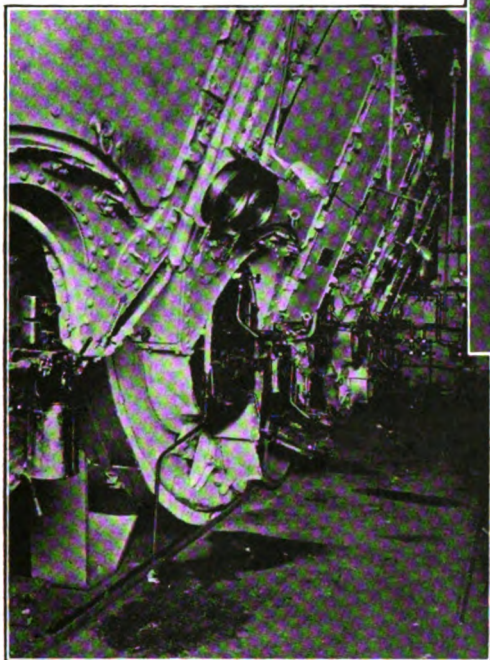


Canadian Rover, launched by the Collingwood Co., Oct. 19, for the Canadian government, is 3900 tons deadweight, and of the 'tween decks type. The vessel was christened by Mrs. H. B. Smith, wife of the president of the company. Mr. Smith is at her right, while at her left is J. S. Leitch, managing director of the company.

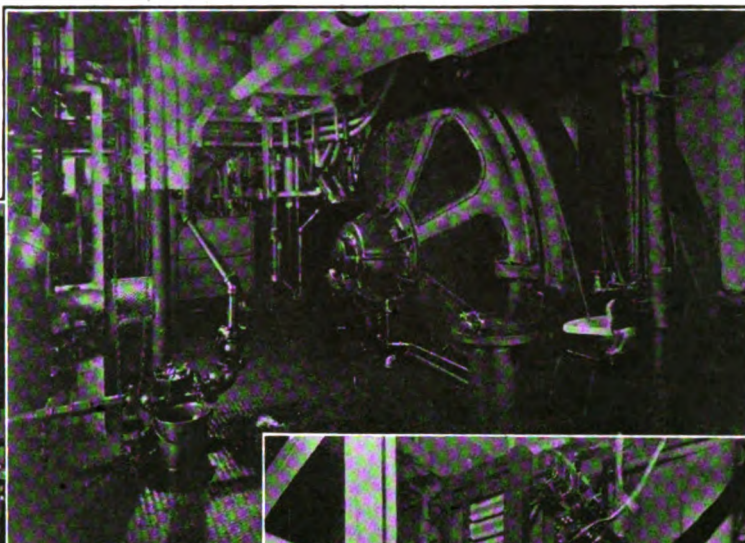


Photographs from Far and Near

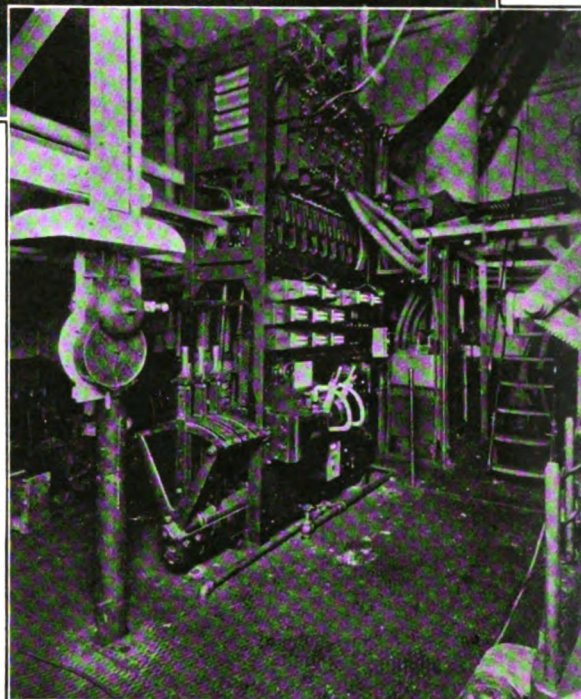
Battery of oil-burning boilers, and motor for propeller drive on the Eclipse, first electrically driven, general cargo merchant ship in the United States



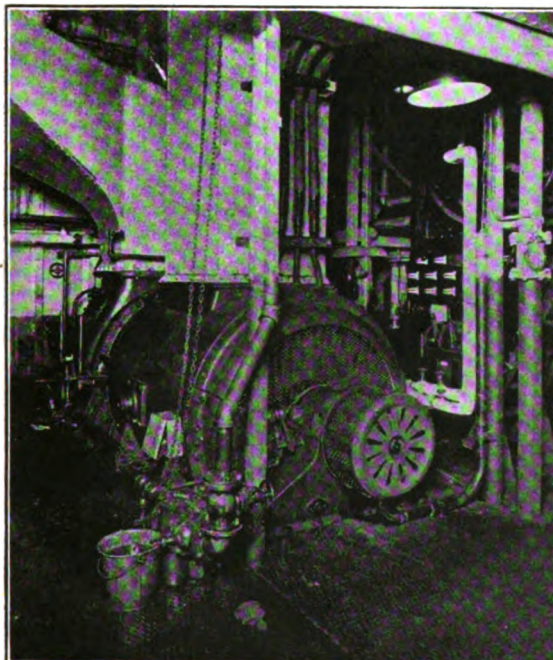
General view of the turbine-generator.



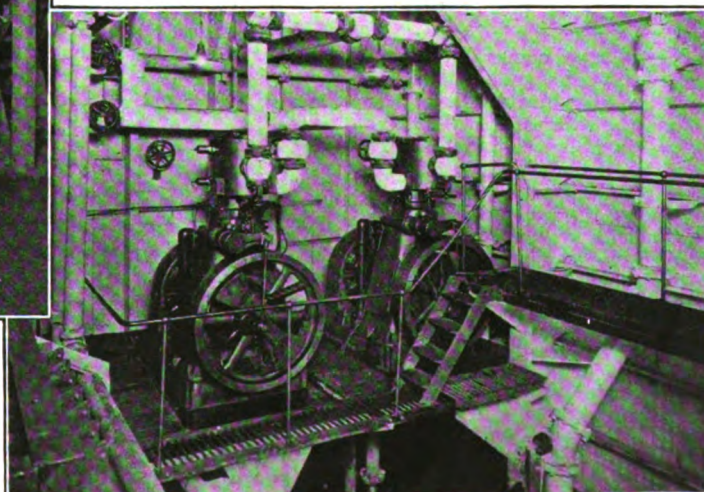
Switchboard and signaling apparatus on the Eclipse.



The Eclipse is under charter to the American Ship & Commerce Corp., and is in service between New York and the Dutch East Indies. The company has in the same service also a diesel engined boat, chartered from the shipping board. The board hopes to make an accurate comparison between diesel and electrically propelled vessels.



Steam engine driven generating sets on the Eclipse for supplying auxiliary electric current.



Late Decisions in Maritime Law

Legal Tips For Ship Owners and Officers

Specially Compiled for The Marine Review

By Harry Bowne Skillman

Attorney at Law

A VESSEL, in passing through the draw of a bridge constructed and maintained according to the government's requirements, is burdened with the obligation to recognize it as a legal structure, to take notice of the extent to which it obstructs navigation and use reasonable skill and care to avoid injuring it, having in view the difficulty and peril, although the difficulty and peril be created by the bridge itself. Due care in such a case, it was said in the case of *Wilmington Railway Bridge Co. v. Franco-Ottoman Shipping Co.*, 259 *Federal Reporter*, 166, is the card which the unusual and difficult conditions suggest as reasonable. It was further stated that the bridge owners cannot lay upon the ship a duty to guarantee safety against every possible peril and difficulty their own obstruction to navigation had brought about. On the issue of negligence the bridge owners have in their favor the presumption that a moving vessel is negligent in colliding with a vessel at anchor or a dock or bridge properly constructed, but this presumption may be rebutted by proof that the location of the stationary vessel, the obstruction of navigation by the bridge, or other causes had brought the moving vessel into an emergency not to be reasonably foreseen and that the course taken by the navigator in the emergency was such as might well have been taken by a prudent and skillful navigator.

In the case of *CONVOY*, 257 *Federal Reporter* 843, it was said that a maritime lien arises from a salvage service, which requires the raising of a sunken vessel or its cargo outside of the vessel's home port, but that a lien for salvage does not accrue where a vessel is sunk at her home port, under such circumstances that no danger or unusual effort is involved in raising the vessel to the surface and in delivering her either to the owner or to a place of safety. The court further said that a maritime lien does not arise for procuring and furnishing material in the building of a boat, by raising that material from under the surface of the water, as this is not salvage and not work upon a vessel until the new boat is complete. A maritime lien for salvage will lie, even for a boat in her home port, when the nature of the services renders the saving of the vessel or cargo a salvage service, as recognized by admiralty law. It was further stated: "If a vessel is placed on a dry-dock or pumped out in order to raise her sufficiently for the making of repairs, a lien will arise for the entire bill, just as a lien for the actual work of repair is created. If, therefore, a

vessel is lying on the bottom, and as a part of repairing a hole in the vessel she has to be raised, there seems to be no logical reason why it should not be treated as a part of the work from which a lien would arise. The essential element would seem to be that the vessel was to be repaired—that is, to be restored—and that she had not been abandoned or treated as material for the building of another vessel. On the other hand, if the sunken vessel had been treated as a total loss, and yet saved, the fact that she might be restored to service by having certain repairs made would not take the work out of the class of salvage."

* * *

An interesting observation with reference to salvage is that of the court in the case of *F. Q. BARSTOW*, 257 *Federal Reporter* 793, wherein it appeared that the salvage service was rendered in towing a burning steamship loaded with naphtha and munitions from a burning pier. The court said: "In passing on salvage claims arising out of harbor fires, it is, of course, necessary to keep in mind that the hope of large rewards sometimes leads tugboats not only to rush in where they are not needed, but to get in the way of the municipal fire department and of each other, or to take ships where they are in more danger, or where they will expose other property to unnecessary hazard. There can be no question that it took more than ordinary courage to go and stay in the neighborhood of the burning *BARSTOW*. * * * The explosion of the ammunition in the after magazine might well have been fatal to those near her stern. How imminent this peril was to the apprehension of the chief engineer of the ship was shown by his risking his life in an effort to prevent it. After all is said, what the tugboat men did not do speaks eloquently of their fears. They are a bold set. They dearly love a salvage allowance. There were perhaps a score of them near the fire. If they had not thought that death was hovering over the ship and all near it, every one of them would have striven to get a line on her, or on some other tug which had already done so." The vessel with her cargo was worth \$3,500,000 and the court awarded \$50,000, stating, in doing so, that "whenever a sum is awarded to master and crew, it will be shared among them in proportion to the wage bill."

* * *

The Harter act does not exonerate a vessel owner from liability for general average contribution in respect of cargo jettisoned, it was held in *ERNESTINA*, 259 *Federal Reporter* 772.

"Clearly, the chief purposes of the Harter act," said the court, "were to authorize or effect substantial changes in the relations between vessel owners as common carriers and cargo owners as shippers. But we are unable to believe that this act was intended to work a radical change in the relations of coadventurers arising out of a voluntary sacrifice in the common interest in order to save the ship and remaining cargo from a peril of the sea or from an act of God. * * * We find it impossible to believe that congress intended to make it possible for the captain of a ship to sacrifice all or a large part of the cargo in order to save his ship, without any obligation on the part of the saved ship to contribute to the loss of the cargo owner. Only plain and unmistakable language would warrant a court in inferring a legislative purpose so inconsistent with the fundamental principles both of general average and of common carrier duty."

* * *

A collision between a steamship being backed from her pier and headed for sea by a tug and the tow of a tug moving down the channel was held, in the case of *DORSET*, 260 *Federal Reporter* 32, to be due to faults of the masters of both tugs, each of whom, it appeared, left it to the other to keep out of the way and failed to take any precautions. The situation was one of the special circumstances under article 27 of the Inland Navigation Rules, not a crossing case, and required reasonable care to avoid immediate danger. The steamship, it was decided, was not liable for the faults in her navigation, she being under the exclusive control of the tug's master, not as a pilot, but as the master, employed to take the steamship from the dock and start her to sea, and the tug actually pushing her in making the maneuver; under these circumstances the negligence in the navigation of the steamship was the negligence of the towing company as an independent contractor.

* * *

When hire or freight is payable at a designated place at a fixed time, there is not any lien against the cargo, unless the charter party expressly so provides. The test is always the intent of the parties as gathered from the whole contract. Where, as in the instant case, payment was to be made in New York at fixed times, but a lien was also provided for, it must be concluded that the lien was an additional safeguard.—*Actieselskabet Dampsk. Thorbjørn v. Harrison & Co. Inc.*, 260 *Federal Reporter* 287.

Marine News in a Personal Way

Intimate Gossip About What Leaders in the
Maritime World Are Doing

BRIG. GEN. FRANK T. HINES, who resigned as chief of the transportation service of the army to become vice president and director of operations of the Baltic Steamship Co. of America, established a brilliant military record. In appreciation of his work in connection with the complicated problems of transporting troops and supplies through the submarine zone, General Hines was awarded both the army and navy distinguished service medals, and he was raised from the grade of captain to that of a permanent brigadier general in the regular army. Following the armistice, General Hines was in charge of all military transportation incident to demobilization of the military forces, and more recently, as director of the inland and coastwise waterways service, was in charge of the war department inland waterways program. The latter duties are being carried on by his successor, Brig. Gen. W. D. Connor. As vice president of the Baltic Steamship Co., General Hines is making New York his headquarters. The corporation is a new one operating passenger and cargo ships between New York and Danzig and British and channel ports.

ROBERT C. HILL has resigned as manager of the Merchants' Exchange of Seattle, after close to 10 years connection with it. During that time he has seen it grow from a small beginning to a large and influential organization and has been an important factor in that growth. Before forming a new business connection, Mr. Hill announces he will take a long vacation. FRANK R. HANLON, former traffic manager for the port commissioner of Seattle, succeeds Mr. Hill as manager of the exchange.

RASMUS HANSEN, former manager of the Russian-American line in New York, has been made agent at Libau for the United Baltic Corp., which operates the Baltic-American line. The United Baltic is a British company and is represented as loading agents in New York by Houlder, Weir & Boyd.

BARON KONDO was re-elected president of the Nippon Yusen Kaisha at

the annual meeting of the company in Yokohama recently.

ROGER D. PINNEO, freight traffic manager of the Pacific Steamship Co., has been appointed traffic manager for the port of Astoria, Oregon. He is reported to have been offered a larger salary than is received by any traffic man on the coast. He will assume his new duties early in 1921. Mr. Pinneo believes that Astoria has a bright future and it was only the exceptional opportunity offered that induced him to



BRIG. GEN. FRANK T. HINES

Who has left army transportation service to direct operations of Baltic Steamship Co. of America

leave the Admiral line, with whom he has been associated many years. Due largely to his efforts, the Pacific Steamship Co. has built up a large foreign trade in the last two years. He is regarded as one of the most competent traffic men on the Pacific and he was selected only after careful consideration of the men eligible for the position.

RICHARD M. SEMMES, until recently a member of the Alaska territorial shipping board, has been named district manager at Seattle for the United States shipping board, succeeding D. W. Burchard, who left the office Jan. 1. Semmes is a native of Maryland, but

for many years has been associated with North Pacific shipping interests. He formerly was with the Admiral line and for a time was engaged in shipbuilding. Last winter he was in Washington attending the committee hearings on the Jones merchant marine bill. Since then he has been an energetic defender of the bill. Mr. Burchard will take an extended rest after which he will again engage in shipping.

NEAL H. BEGLEY, vice president of Frank Waterhouse & Co., has returned to Seattle after an extended tour of the Orient. Mr. Begley reports the Orient is recovering its economic equilibrium and he sees great opportunities for the United States in the Far East. China, especially, he says, is friendly to America while the Straits settlements offer a splendid market.

CAPT. J. E. GUPTILL, veteran of Pacific coast shipping, has been appointed master of the shipping board's new passenger liner WENATCHEE which will inaugurate the Pacific Steamship Co.'s Oriental service early in 1921. Capt. Guptill had been with the Admiral line and its predecessor for several decades and is familiar with the Oriental routes. Capt. G. T. January was originally appointed to the WENATCHEE, but the company has decided to retain him at the plant of the New York Shipbuilding Co. as supervisor of the five vessels under construction and allocated to the Pacific Steamship Co.

GEORGE B. LAMPING, a member of the state senate, has been elected a member of the port of Seattle, succeeding T. S. Lippy, whose term has expired.

A. R. GARDNER, purchasing agent, has been promoted to the position of general purchasing agent for the Pacific Steamship Co., with headquarters at Seattle. Joseph B. Mehan continues as his chief assistant. This company has advanced Perry Otteson from port steward to general commissary with supervision over all Admiral line vessels, both coastwise and offshore. F. E. McPherran, until recently assistant at Portland, has been promoted to the position of port steward.

NUMBER AND NET TONNAGE OF SHIPS IN FOREIGN AND COASTWISE TRADE OF NEW ORLEANS FOR YEAR ENDING DECEMBER 31, 1919

ENTERED AND CLEARED	AMERICAN VESSELS						FOREIGN VESSELS					
	AGGREGATE		WITH CARGO		IN BALLAST		WITH CARGO		IN BALLAST		TOTAL	
	Vessels	Tons	Vessels	Tons	Vessels	Tons	Vessels	Tons	Vessels	Tons	Vessels	Tons
In Foreign Trade....	1,608	3,131,464	735	1,465,131	71	152,506	806	1,617,637	556	810,329	246	703,498
In Coastwise Trade..	522	1,427,142	181	498,514	231	634,716	412	1,133,230	38	110,434	72	183,478
Total.....	2,130	4,558,606	916	1,963,645	302	787,222	1,218	2,750,867	594	920,763	318	886,976
CLEARED												
In Foreign Trade....	1,706	3,469,854	636	1,297,905	196	436,051	832	1,743,956	787	1,615,709	87	120,189
In Coastwise Trade..	426	1,085,706	250	760,598	135	234,660	385	995,258	26	60,459	15	29,989
Total.....	2,132	4,555,560	886	2,058,503	331	670,711	1,217	2,729,214	813	1,676,168	102	150,178

New Orleans Traffic

The board of commissioners of the port of New Orleans has just issued a comprehensive booklet covering the port and terminal facilities of the Louisiana city, in which is included the accompanying table of the number of ships in foreign and coastwise trade in and out of that port during the calendar year ending December 31, 1919, the latest figures available.

Ship Launchings and Deliveries

That the shipping board's building program is drawing to completion is evidenced in the steady decline in the aggregate of ship launchings and deliveries. Those for December show a considerable falling-off from the previous month. Much work is being finished and delivered, while the new tonnage to leave the ways is noticeably smaller.

DELIVERIES

CEDARHURST—Delivered Dec. 2; for United States shipping board; freighter; by American International Shipbuilding Corp., Hog Island yard.

CANADIAN HIGHLANDER—Delivered Dec. 23; freighter; for Canadian government; by Wallace Shipbuilding Co., Vancouver, B. C.

CANADIAN WINNER—Delivered Nov. 29; freighter; for Canadian government; by Harbour Marine Co., Ltd., Victoria, B. C.

LAUNCHINGS

OMAHA—Launched Dec. 14; scout cruiser; 54 x 650 feet; 75,000 horsepower; 35 knots; for United States navy; by Todd Ship Yards Corp., Seattle.

SAMUEL L. FULLER—Launched Dec. 21; tanker; 10,600 tons; for Sinclair Consolidated Oil Corp.; by Sun Shipbuilding Corp., Chester, Pa.

DISTRICT OF COLUMBIA—Launched Dec. 18; tanker; 10,300 tons; 33 x 59 x 430 feet; for United States shipping board; by the Baltimore Dry Docks & Shipbuilding Corp., south plant.

GEORGE PIERCE—Launched Dec. 9; tanker; 9000 tons; for United States shipping board; by Merchant Shipbuilding Corp., Chester yard.

SWIFTSURE—Launched Dec. 15; tanker; 12,000 tons; for Swiftsure Oil Co.; by Northwest Bridge & Iron Co., Portland, Oreg.

W. H. LIBBY—Launched Dec. 14; tanker; 12,000 tons; for Standard Oil Co. of New York; by G. M. Standiford Construction Co., Seattle.

CANADIAN EXPLORER—Launched Dec. 18; freighter; for Canadian government, at Halifax.

SAN TEODORO—Launched Dec. 18; tanker; 8400 tons; 31 x 53 x 427 feet; for Eagle Oil Trans-

port Co., London; built by Standard Shipbuilding Corp., Shooter's island yard.

KENNECOTT—Launched Dec. 30; tanker; for Alaska Steamship Co., Seattle; by Todd Dry Dock & Construction Corp., Tacoma, Wash.

SINTRAM—Launched Dec. 11; schooner; 3600 tons; by Freeport Shipbuilding Co., Freeport, Me.

Panama Canal Traffic

Traffic through the Panama canal in October is shown in tables following:

FOR OCTOBER

Number of commercial vessels through the canal	238
Registered net tonnage of above, Panama canal measurement	935,579 tons
Number of commercial vessels without cargo	33
Registered net tonnage of above, Panama canal measurement	118,869

ATLANTIC TO PACIFIC

Commodity	No. of Cargoes	Tons
Coal	10	57,957
Fuel oil	8	64,661
Refined oils	5	39,757
Steel and iron	5	28,942
Sulphur	1	4,000
Silver and	1	3,000
General and mixed	75	290,396
Totals	105	488,713

PACIFIC TO ATLANTIC

Nitrate	26	143,837
Wheat	8	61,925
Lumber	7	25,153
Cold storage-food products ..	4	18,035
Flour	3	23,588
Barley	3	14,958
Sugar	2	9,378
Pineapples	2	12,371
Lubricating oil	1	11,000
Chrome ore	1	7,332
Diesel oil	1	6,000
Coal	1	4,500
Gas oil	1	2,640
Coffee	1	51
General and mixed	39	161,585
Totals	100	502,363

Seattle Traffic

The record of traffic at the port of Seattle and in the Washington customs district, including months for which figures are now available, follow:

SEATTLE PORT TRAFFIC 1920

Deep Sea Arrivals			Deep Sea Departures		
No. ships	Net tonnage	Month	No. ships	Net tonnage	Month
220	284,567	January	247	320,212	
220	302,158	February	236	306,467	
290	341,705	March	299	325,164	
328	341,921	April	348	344,540	
376	328,594	May	392	324,932	
353	332,668	June	433	346,849	
417	411,626	July	461	444,607	
438	371,148	August	393	368,327	
422	380,582	September	323	345,535	
359	347,412	October	314	366,669	
256	348,452	November	228	334,890	

WASHINGTON CUSTOMS DISTRICT

—Entrances—			—Clearances—		
Jan.—American	No. Ships	Net tonnage	Feb.—American	No. Ships	Net tonnage
Foreign	185	155,268	Foreign	187	151,865
	346	242,653		383	280,827
Feb.—American	147	88,528	Feb.—American	173	98,347
Foreign	183	188,174	Foreign	176	168,526
	330	276,702		349	266,873
Mar.—American	185	118,794	Mar.—American	174	107,134
Foreign	161	183,884	Foreign	155	175,560
	346	302,678		329	282,694
Apr.—American	177	127,788	Apr.—American	174	91,676
Foreign	183	188,174	Foreign	176	168,526
	350	280,959		342	243,328
May.—American	228	107,183	May.—American	272	107,444
Foreign	188	184,458	Foreign	194	181,910
	416	291,641		466	289,354
June.—American	264	135,420	June.—American	238	93,617
Foreign	190	162,171	Foreign	194	174,772
	454	297,591		432	268,389
July.—American	272	105,814	July.—American	304	122,723
Foreign	220	170,907	Foreign	219	193,378
	492	276,721		523	316,101
Aug.—American	292	117,200	Aug.—American	292	125,510
Foreign	203	171,451	Foreign	199	185,035
	495	288,651		491	310,535
Sept.—American	229	101,048	Sept.—American	239	116,189
Foreign	209	189,138	Foreign	216	185,007
	438	290,186		455	301,196
Oct.—American	230	89,031	Oct.—American	217	105,152
Foreign	182	167,350	Foreign	187	198,588
	412	256,381		404	303,740

FOREIGN IMPORTS, EXPORTS AND TONNAGE

Passing Through Washington Customs District

1920	Imports	Exports	Total	Entered, Tons	Cleared, Tons	Total, Tons
January	\$20,944,035	\$15,883,758	\$45,847,813	242,653	280,827	523,480
February	40,708,728	15,989,197	56,697,923	276,702	266,873	543,575
March	46,882,720	32,786,040	79,172,760	302,678	282,694	585,372
April	32,713,226	25,158,134	57,869,360	280,959	243,328	524,287
May	38,291,480	12,299,371	50,598,851	291,641	289,354	580,995
June	28,549,557	18,392,975	46,942,832	297,591	268,389	465,980
July	20,888,860	16,057,896	36,944,256	276,721	316,101	592,821
August	25,854,981	11,355,385	37,210,866	288,651	310,535	599,186
September	20,486,721	9,256,973	29,743,694	290,186	301,196	591,382
October	11,913,469	12,278,970	24,192,439	256,381	303,740	560,121

1920 Construction Record of U. S. Yards

Complete tabulation showing vessels delivered and launched, including both private and government contracts.

North Atlantic

AMERICAN INTERNATIONAL SHIPBUILDING CORP., HOG ISLAND, PA.

Name or Yard No.	Name and Address of Owner	Type of Vessel	Gross Tonnage	Speed, Knots	Length, Feet	Breadth, Feet	I.H.P.	Date Launched
Clearwater	U. S. Shipping Board	Cargo	5590	11.50	401-0	x 54-0	x 32-0	2500
Clontarf	U. S. Shipping Board	Cargo	5590	11.50	401-0	x 54-0	x 32-0	2500
Winona	U. S. Shipping Board	Cargo	5590	11.50	401-0	x 54-0	x 32-0	2500
Coldwater	U. S. Shipping Board	Cargo	5590	11.50	401-0	x 54-0	x 32-0	2500
Liberty Bell	U. S. Shipping Board	Cargo	5590	11.50	401-0	x 54-0	x 32-0	2500
Comerant	U. S. Shipping Board	Cargo	5590	11.50	401-0	x 54-0	x 32-0	2500
Collingsworth	U. S. Shipping Board	Cargo	5590	11.50	401-0	x 54-0	x 32-0	2500
Blue Triangle	U. S. Shipping Board	Cargo	5620	11.50	401-0	x 54-0	x 32-0	2500
Colthrape	U. S. Shipping Board	Cargo	5620	11.50	401-0	x 54-0	x 32-0	2500
Jomar	U. S. Shipping Board	Cargo	5620	11.50	401-0	x 54-0	x 32-0	1500
Cormack	U. S. Shipping Board	Cargo	5620	11.50	401-0	x 54-0	x 32-0	2500
Lorraine Cross	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Independence Hall	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Conehatta	U. S. Shipping Board	Cargo	5620	11.50	401-0	x 54-0	x 32-0	2500
Conejos	U. S. Shipping Board	Cargo	5620	11.50	401-0	x 54-0	x 32-0	2500
Conness Peak	U. S. Shipping Board	Cargo	5620	11.50	401-0	x 54-0	x 32-0	2500
Artigas	U. S. Shipping Board	Cargo	5620	11.50	401-0	x 54-0	x 32-0	2500
Capillo	U. S. Shipping Board	Cargo	5620	11.50	401-0	x 54-0	x 32-0	2500
Capulin	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Jolee	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Cardonia	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Careneo	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Carlton	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Carplaka	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Carrabulle	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Cassimir	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Tomalva	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Manatawny	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Argosy	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Cody	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Castana	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Bibhco	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Carahoula	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Brush	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
Vaha	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
C-darhurst	U. S. Shipping Board	Cargo	5543	11.50	401-0	x 54-0	x 32-0	2500
U. S. A. T. Chaumont	War Department	Cargo	7556	15	448-0	x 58-0	x 40-0	6000
U. S. A. T. Argonne	War Department	Cargo	7556	15	448-0	x 58-0	x 40-0	6000
U. S. A. T. Somme	War Department	Cargo	7556	15	448-0	x 58-0	x 40-0	6000
U. S. A. T. Aisne	War Department	Cargo	7556	15	448-0	x 58-0	x 40-0	6000
U. S. A. T. Ourcq	War Department	Cargo	7556	15	448-0	x 58-0	x 40-0	6000
U. S. A. T. Marne	War Department	Cargo	7556	15	448-0	x 58-0	x 40-0	6000
U. S. A. T. Tours	War Department	Cargo	7556	15	448-0	x 58-0	x 40-0	6000
U. S. S. Wright	Air Force Tend.	Cargo	7995	15	448-0	x 58-0	x 40-0	6000

ATLANTIC COAST CO., BOSTON

.....	Crowell & Thurlow S. S. Co.	Cargo	6213	10	394-1	x 55-1	x 31-0	12-16-20
.....	Atlantic Coast Co.	Schr.	1665	..	232-0	x 41-5	x 23-1	.....
.....	Atlantic Coast Co.	Schr.	1665	..	232-0	x 41-5	x 24-2	.....
.....	Crowell & Thurlow	Schr.	1607	..	230-0	x 41-9	x 22-8	12-27-20
.....	Crowell & Thurlow	Schr.	1151	..	193-8	x 37-4	x 20-2	11-25-20
.....	East Coast Ship Co.	Schr.	735	..	184-1	x 36-6	x 14-9	.....
.....	Boston Maritime Corp.	Schr.	.....	..	.....	.....	.....	12-27-20
.....	Crowell & Thurlow	Schr.	1270	..	202-6	x 40-1	x 22-2	.....
.....	East Coast Ship Co.	Schr.	1361	..	206-0	x 40-7	x 22-6	12-13-20

ATLANTIC CORP., PORTSMOUTH, N. H.

Norumbega	U. S. Shipping Board	Cargo	8800	10 1/2	410-5 1/2	x 54-6	x 29-9	2800
Brookline	U. S. Shipping Board	Cargo	8800	10 1/2	410-5 1/2	x 54-0	x 29-9	2800
Springfield	U. S. Shipping Board	Cargo	8800	10 1/2	410-5 1/2	x 54-0	x 29-9	2800
Tolosa	U. S. Shipping Board	Cargo	8800	10 1/2	410-5 1/2	x 54-0	x 29-9	2800
Pachet	U. S. Shipping Board	Cargo	8800	10 1/2	410-5 1/2	x 54-0	x 29-9	2800
Pagasset	U. S. Shipping Board	Cargo	8800	10 1/2	410-5 1/2	x 54-0	x 29-9	2800

BALTIMORE DRY DOCKS & SHIP BUILDING CO., LOCUST POINT, BALTIMORE

Bethelridge	U. S. Shipping Board	Tanker	7367	10	430-0	x 59-0	x 33-3	2650
Betterton	U. S. Shipping Board	Tanker	7367	10	430-0	x 59-0	x 33-3	2650
Miller County	U. S. Shipping Board	Tanker	7367	10	430-0	x 59-0	x 33-3	2650
Cecil County	U. S. Shipping Board	Tanker	7641	10	430-0	x 59-0	x 33-3	2650
Bidwell	U. S. Shipping Board	Tanker	7641	10	430-0	x 59-0	x 33-3	2650
Hampton Roads	U. S. Shipping Board	Tanker	7641	10	430-0	x 59-0	x 33-3	2650
District of Columbia	U. S. Shipping Board	Tanker	7507	10	430-0	x 59-0	x 33-3	2650
Clement Smith	Calvert Navigation Co.	Tanker	7507	10	430-0	x 59-0	x 33-3	2650
Danville	U. S. Shipping Board	Tanker	4311	10	340-0	x 49-0	x 28-7	1800
City of Freeport	U. S. Shipping Board	Tanker	4469	10	340-0	x 49-0	x 28-7	1800
Warwick	U. S. Shipping Board	Tanker	4469	10	340-0	x 49-0	x 28-7	1800

BATH IRON WORKS, LTD., BATH, ME.

A. L. Kent	Crowell & Thurlow, Boston	Cargo	6250	10	395-5	x 55-0	x 34-0	2400
------------	---------------------------	-------	------	----	-------	--------	--------	------

BETHLEHEM SHIPBUILDING CORP., LTD., BETHLEHEM, PA.

FORE RIVER PLANT, QUINCY, MASS.

S-18	U. S. Navy	Submarine	.....	..	.....	.....	.....	.....
S-19	U. S. Navy	Submarine	.....	..	.....	.....	.....	.....
S-20	U. S. Navy	Submarine	.....	..	.....	.....	.....	.....
S-21	U. S. Navy	Submarine	.....	..	.....	.....	.....	.....
S-22	U. S. Navy	Submarine	.....	..	.....	.....	.....	.....
S-23	U. S. Navy	Submarine	.....	..	.....	.....	.....	.....
S-24	U. S. Navy	Submarine	.....	..	.....	.....	.....	.....
S-25	U. S. Navy	Submarine	.....	..	.....	.....	.....	.....
S-26	U. S. Navy	Submarine	.....	..	.....	.....	.....	.....
S-28	U. S. Navy	Submarine	.....	..	.....	.....	.....	.....
S-29	U. S. Navy	Submarine	.....	..	.....	.....	.....	.....
Cubore	Bethlehem Steel Corp.	Ore Carrier	6891	10	450-6	x 57-0	x 37-0	2500
China Arrow	Standard Transp. Co.	Tanker	8404	11	485-0	x 62-6	x 39-6	3200
Japan Arrow	Standard Transp. Co.	Tanker	8404	11	485-0	x 62-6	x 39-6	3200
India Arrow	Standard Transp. Co.	Tanker	8404	11	485-0	x 62-6	x 39-6	3200

1920 Construction Record of U. S. Yards

MOORE PLANT, ELIZABETH, N. J.							
Name or Yard No.	Name and Address of Owner	Type of Vessel	Gross Tonnage	Speed, Knots	Length, Breadth and Depth, Feet	I.H.P.	Date Launched
Nanquitt	U. S. Shipping Board	Cargo	5100	11	328-6 x 46-0 x 25-6	1450	9-11-19
Manshon	U. S. Shipping Board	Cargo	5100	11	328-6 x 46-0 x 25-6	1450	9-25-19
Falc Socony	Standard Oil Co. of N. Y.	Barge	690	..	156	..	..
Rochester Socony	Standard Oil Co. of N. Y.	Barge	690	..	156	..	..
Utica Socony	Standard Oil Co. of N. Y.	Barge	690	..	156	..	..
Itopopo	..	Refrig.	750	..	..	..	..
Acquidadan	..	Refrig.	750	..	..	..	..
..	..	Ferry	..	..	..	..	..
..	..	Ferry	..	..	..	..	..
HARLAN PLANT, WILMINGTON, DEL.							
Albert E. Watts	Sinclair Nav. Co.	Tanker	10600	..	..	2600	12-28-20
Liberty Minquas	U. S. Shipping Board	Tanker	5056	11	405-0 x 51-0 x 30-2	2700	1-24-20
Kehuku	U. S. Shipping Board	Tanker	5107	11	405-0 x 51-0 x 30-2	2700	4-10-20
Kekoskee	U. S. Shipping Board	Tanker	5124	11	405-0 x 51-0 x 30-2	2700	8-28-20
Mason City	U. S. Shipping Board	Cargo	3483	11	341-5 x 46-0 x 25-6	1900	1-31-20
Maddequet	U. S. Shipping Board	Cargo	3483	11	341-5 x 46-0 x 25-6	1900	2-19-20
Gold Star	U. S. Shipping Board	Cargo	4872	11	391-9 1/2 x 52-0 x 29-6	2500	6- 5-20
Glenora	U. S. Shipping Board	Cargo	4980	11	391-9 1/2 x 52-0 x 29-6	2500	8-14-20
Natirar	U. S. Shipping Board	Cargo	4980	11	391-9 1/2 x 52-0 x 29-6	2500	10-16-20
Eugene V. R. Thayer	Sinclair Navigation Co., N. Y.	Tanker	7137	11	445-10 x 59-0 x 33-3	3000	10-25-20
SPARROWS POINT PLANT, SPARROWS POINT, MD.							
Hawkeye State	U. S. Shipping Board	Pass.	10000	17 1/2	518-0 x 72-0 x 50-0	5000	8-29-18
Buckeye State	U. S. Shipping Board	Pass.	10000	17 1/2	518-0 x 72-0 x 50-0	5000	10- 3-18
Hahatonka	U. S. Shipping Board	Tanker	10100	11	435-0 x 56-0 x 33-6	2250	6-14-19
Hahira	U. S. Shipping Board	Tanker	10100	11	435-0 x 56-0 x 33-6	2250	11-25-19
Arto	Standard Transp. Corp.	Tanker	10100	..	..	3000	..
Rochester Vacuum	Standard Transp. Corp.	Tanker	10100	..	..	3000	..
Agwisca	Standard Transp. Corp.	Tanker	12620	..	..	3200	..
Agwilake	Standard Transp. Corp.	Tanker	12620	..	..	3200	..
BOWKER SHIPBUILDING CO., PHIPPSBURG, ME.							
For builder's account	Schr.	..	..	..	..	..	10-27-20
CHESTER SHIPBUILDING CO., LTD., CHESTER, PA.							
Summerleaf	U. S. Shipping Board	Cargo	5980	11	417-8 1/2 x 54-0 x 32-10	3000	1-16-20
Donald McKay	U. S. Shipping Board	Cargo	5980	11	417-8 1/2 x 54-0 x 32-10	3000	2-21-20
Greenland	U. S. Shipping Board	Cargo	5980	11	417-8 1/2 x 54-0 x 32-10	3000	3-18-20
Henry Steers	U. S. Shipping Board	Cargo	5980	11	417-8 1/2 x 54-0 x 32-10	3000	4- 5-20
Loretta	U. S. Shipping Board	Cargo	5980	11	417-8 1/2 x 54-0 x 32-10	3000	5-27-20
Chester Kiwanis	U. S. Shipping Board	Cargo	5980	11	417-8 1/2 x 54-0 x 32-10	3000	7- 2-20
John Englis	U. S. Shipping Board	Cargo	5980	11	417-8 1/2 x 54-0 x 32-10	3000	7-21-20
John Stevens	U. S. Shipping Board	Cargo	5980	11	417-8 1/2 x 54-0 x 32-10	3000	8-28-20
George E. Webb	U. S. Shipping Board	Cargo	5980	11	417-8 1/2 x 54-0 x 32-10	3000	9-30-20
George Pierce	U. S. Shipping Board	Cargo	5980	11	417-8 1/2 x 54-0 x 32-10	3000	11- 9-20
WM. CRAMP & SONS SHIP & ENGINE BUILDING CO., PHILADELPHIA							
..	U. S. Navy	Tanker	7253	11	430-0 x 53-0 x 33-4	2800	11-26-19
..	U. S. Navy	Tanker	7253	11	430-0 x 53-0 x 33-4	2800	3-16-20
..	U. S. Shipping Board	Freighter	6220	12	404-0 x 53-9 x 36-9 1/2	3000	7-24-20
..	U. S. Shipping Board	Freighter	6220	12	404-0 x 53-9 x 36-9 1/2	3000	10-9-20
..	Florida East Coast R. Co.	Car Ferry	2639	12	337-3 x 57-0 x 22-0	2700	11- 6-20
..	Penin & Occidental S. S. Co.	Pass. Cargo	3350	16	340-0 x 47-0 x 29-0	3600	12-11-20
CUMBERLAND SHIPBUILDING CO., PORTLAND, ME.							
*James C. Hamlen	Rogers & Webb, Boston	Schr.	1138	..	193-0 x 39-0 x 19-6	..	9-11-20
DOWNEY SHIPBUILDING CORP., NEW YORK							
El Estero	Southern Pacific Co., North River, N. Y.	Cargo	4219	12	352-0 x 47-0 x 32-6	2500	9-16-20
El Isleo	Southern Pacific Co., North River, N. Y.	Cargo	4219	12	352-0 x 47-0 x 32-6	2500	10- 6-20
El Lago	Southern Pacific Co., North River, N. Y.	Cargo	4219	12	352-0 x 47-0 x 32-6	2500	11-30-20
EAST COAST SHIP CO., SOMMERSVILLE, MASS.							
*Mary L. Maynard	Boston Maritime Corp.	Schr.	735	..	184-1 x 36-6 x 14-9	..	3-23-20
*Zebedee E. Cliff	Boston Maritime Corp.	Schr.	1361	..	206-0 x 40-7 x 22-6	..	11-13-20
FEDERAL SHIPBUILDING CO., NEW YORK							
No. 31	U. S. Steel Products Co., New York	Cargo	6200	11	400-0 x 55-0 x 35-0	2600	1920
No. 32	U. S. Steel Products Co., New York	Cargo	6200	11	400-0 x 55-0 x 35-0	2600	1920
No. 33	U. S. Steel Products Co., New York	Cargo	6200	11	400-0 x 55-0 x 35-0	2600	1920
No. 34	Freeport Sulphur Transportation Co., New York	Cargo	4100	10	355-0 x 52-6 x 28-0	1700	1920
No. 35	Freeport Sulphur Transportation Co., New York	Tanker	4500	10	355-0 x 52-6 x 28-0	1700	1920
No. 36	U. S. Steel Products Co., New York	Cargo	6900	12	425-0 x 56-0 x 38-0	3100	1920
No. 37	U. S. Steel Products Co., New York	Cargo	6900	12	425-0 x 56-0 x 38-0	3100	1920
No. 38	U. S. Steel Products Co., New York	Cargo	6900	12	425-0 x 56-0 x 38-0	3100	1920
No. 39	U. S. Steel Products Co., New York	Cargo	6900	12	425-0 x 56-0 x 38-0	3100	1920
No. 40	U. S. Steel Products Co., New York	Cargo	6900	12	425-0 x 56-0 x 38-0	3100	1920
No. 41	U. S. Steel Products Co., New York	Cargo	6900	12	425-0 x 56-0 x 38-0	3100	1920
No. 42	U. S. Steel Products Co., New York	Cargo	6900	12	425-0 x 56-0 x 38-0	3100	1920
No. 51	Sinclair Navigation Co., New York	Barge	550	..	..	..	1920
No. 52	Sinclair Navigation Co., New York	Barge	550	..	..	..	1920
No. 53	Sinclair Navigation Co., New York	Barge	550	..	..	..	1920
No. 54	Sinclair Navigation Co., New York	Barge	550	..	..	..	1920
No. 55	Mexican Petroleum Co., New York	Barge	525	..	..	..	1920
No. 56	Mexican Petroleum Co., New York	Barge	525	..	..	..	1920
FREEPORT SHIPBUILDING CO., FREEPORT, ME.							
..	Freeport Shipbuilding Co.	Schr.	2285	..	266-5 x 46-0 x 24-0	..	12-11-20
FRYE-FLYNN CO., HARRINGTON, ME.							
..	Crowell & Thurlow, Boston	Schr.	1151	..	200-0 x 39-0 x 22-0	..	11-25-20
LINCOLN A. GARDNER, STOCTON SPRINGS, ME.							
*No. 5	Crowell & Thurlow, Boston	Schr.	1270	..	185-0 x 40-0 x 22-0	..	5-20-20
*No. 6	Crowell & Thurlow, Boston	Schr.	1305	..	190-0 x 40-0 x 22-0	..	12-24-20
JOHN F. JAMES & SON, ESSEX, MASS.							
†Governor Marshall	J. M. Marshall, Gloucester, Mass.	Trawler	131	9	109-0 x 24-0 x 11-1	120	8-20
*†Laura Goulart	United Fisheries, Gloucester, Mass.	Trawler	143	7	109-0 x 25-0 x 11-3	120	11-20
*Oretha Spinney	Capt. Lemuel Spinney, Gloucester, Mass.	Sailer	135	..	109-0 x 24-0 x 11-3	..	12-20
JOHNSON SHIPYARDS CORP., STATEN ISLAND, N. Y.							
No. 27	Builder's account	Tug	176	10	100-0 x 24-0 x 14-0	450	8-20
*No. 28	Dolphin Transportation Co., New York	Tug	176	10	100-0 x 24-0 x 14-0	450	8-20
*No. 26	Dolphin Transportation Co., New York	Lighter	200	10	100-0 x 30-0 x 11-0	350	8-20
..	..	Barge	1000	..	(Four were delivered)	..	..
..	..	Barge	750	..	(Two were delivered)	..	..
..	..	Lighter	500	..	(Two were delivered)	..	..

1920 Construction Record of U. S. Yards

KINGSTON SHIPBUILDING CO., KINGSTON, N. Y.

Name or Yard No.	Name and Address of Owner	Type of Vessel	Gross Tonnage	Speed, Knots	Length, Breadth and Depth, Feet	I.H.P.	Date Launched
*.....	Standard Oil Co. New York	.....	600	(Five of these were built)			
KYLE & PURDY, NEW YORK							
Baddacoch	U. S. Shipping Board	Tug	.....	11	135-0 x 27-5 x 16-6	900	12-30-19
Bayport	U. S. Shipping Board	Tug	.....	11	135-0 x 27-5 x 16-6	900	3-20-20
Bayside	U. S. Shipping Board	Tug	.....	11	135-0 x 27-5 x 16-6	900	4-14-20
Bayspring	U. S. Shipping Board	Tug	.....	11	135-0 x 27-5 x 16-6	900	7-21-20
Beachhaven	U. S. Shipping Board	Tug	.....	11	135-0 x 27-5 x 16-6	900	8-29-20

NEWBURGH SHIPYARDS, INC., NEWBURGH, N. Y.

Monroe	U. S. Shipping Board	Cargo	5628	10½	401-0 x 54-0 x 32-10	3000	10-19-19
Fishkill	U. S. Shipping Board	Cargo	5628	10½	401-0 x 54-0 x 32-10	3000	11-23-19
Half Moon	U. S. Shipping Board	Cargo	5673	10½	401-0 x 54-0 x 32-10	2800	4-16-20
Storm King	U. S. Shipping Board	Cargo	5673	10½	401-0 x 54-0 x 32-10	2800	7-31-20
Hernian Frasch	Union Sulphur Co.	Cargo	4421	13	356-0 x 51-9 x 32-5½	3000	6-5-20
Olancho	Cuyamel Fruit Company	Pass. Cargo	2100	14½	301-6 x 42-0 x 17-0	3010	8-27-20
Choluteca	Cuyamel Fruit Company	Pass. Cargo	2400	14½	301-6 x 42-0 x 17-0	3000	11-30-20

NEW YORK SHIPBUILDING CORP., CAMDEN, N. J.

Old North State	U. S. Shipping Board	Pass., Cargo	10,533	14	522-8 x 62-0 x 42-0	70000	2-29-20
Creole State	U. S. Shipping Board	Pass., Cargo	10,533	14	522-8 x 62-0 x 42-0	70000	4-2-20
Granite State	U. S. Shipping Board	Pass., Cargo	10,533	14	522-8 x 62-0 x 42-0	70000	7-31-20
Panhandle State	U. S. Shipping Board	Pass., Cargo	10,533	14	522-8 x 62-0 x 42-0	70000	3-9-20
Wolverine State	U. S. Shipping Board	Pass., Cargo	10,533	14	522-8 x 62-0 x 42-0	70000	9-16-20
Centennial State	U. S. Shipping Board	Pass., Cargo	10,533	14	522-8 x 62-0 x 42-0	70000	12-11-20
Bay State	U. S. Shipping Board	Pass., Cargo	13,500	19	535-2 x 72-0 x 50-0	12000	7-17-20
Keystone State	U. S. Shipping Board	Pass., Cargo	13,500	18	535-2 x 72-0 x 50-0	12000	5-15-20
Empire State	U. S. Shipping Board	Pass., Cargo	13,500	18	535-2 x 72-0 x 50-0	12000	8-4-20
Lone Star State	U. S. Shipping Board	Pass., Cargo	13,500	18	535-2 x 72-0 x 50-0	12000	12-23-20
Hrosier State	U. S. Shipping Board	Pass., Cargo	13,500	18	535-2 x 72-0 x 50-0	12000	10-23-20
Nora	Grace S. S. Co. of Del., New York	Tanker	9620	10½	485-2 x 62-6 x 39-6	3200	9-25-20
Camden	United Fruit Co., Boston	Tanker	6870	11	435-8 x 56-3 x 33-4	3000	11-24-20

NEWPORT NEWS SHIPBUILDING & DRY DOCK CO., NEWPORT NEWS, VA.

Salinas	U. S. Shipping Board	Tanker	8200	10½	463-3 x 60-0 x 37-2	2600	.....
Sapelo	U. S. Shipping Board	Tanker	8200	10½	463-3 x 60-0 x 37-2	2600	.....
Sepulga	U. S. Shipping Board	Tanker	8200	10½	463-3 x 60-0 x 37-2	2600	.....
Tippecanoe	U. S. Shipping Board	Tanker	8200	10½	463-3 x 60-0 x 37-2	2600	.....
Trinity	U. S. Shipping Board	Tanker	8200	10½	463-3 x 60-0 x 37-2	2600	.....
Golden State	U. S. Shipping Board	Pass., Cargo	12000	16	518-0 x 72-0 x 41-0	12000	7-17-20
Silver State	U. S. Shipping Board	Pass., Cargo	12000	16	518-0 x 72-0 x 41-0	12000	12-11-20

PUSEY & JONES CO., GLOUCESTER CITY, N. J.

Shelter Island	U. S. Shipping Board	Cargo	2942	10	300-0 x 44-0 x 22-9	1650	2-25-20
Norwalk	Eastern S. S. Lines	Cargo	2157	12	251-0 x 42-6 x 18-6	1200	7-3-20
Haddon Heights	Reading R. R. Co.	Ferry	773	14	159-0 x 35-0 x 14-8	900	4-17-20
Ventor	Reading R. R. Co.	Ferry	773	14	159-0 x 35-0 x 14-8	900	5-29-20
Ethan Allen	U. S. Shipping Board	Cargo	8294	11	455-0 x 60-0 x 36-8	3200	12-31-19
Patrick Henry	U. S. Shipping Board	Cargo	8294	11	455-0 x 60-0 x 36-8	3200	3-16-20
John Jay	U. S. Shipping Board	Cargo	8289	11	455-0 x 60-0 x 36-8	3000	6-15-20
James Otis	U. S. Shipping Board	Cargo	8292	11	455-0 x 60-0 x 36-8	3000	7-24-20
William Penn	U. S. Shipping Board	Cargo	8168	11	455-0 x 60-0 x 36-8	4200	9-15-2

PERCY & SMALL, INC., BATH, ME.

*Cecelia Cohen	David Cohen & Co., Inc.	Schr.	1102	...	199-0 x 38-4 x 19-2	2-9-20
----------------	-------------------------	-------	------	-----	---------------------	-------	--------

SPEDDEN SHIPBUILDING CO., BALTIMORE

Aladdin	Standard Oil Co. of N. J.	Tug	336	12	135-0 x 25-0 x 14-0	730	9-30-19
---------	---------------------------	-----	-----	----	---------------------	-----	---------

STANDARD SHIPBUILDING CORP., SHOOTERS ISLAND, N. Y.

Chappaqua	U. S. Shipping Board	Cargo	4755	10½	392-0 x 52-0 x 29-0	2500	3-13-20
Hibueras	Cuyamel Fruit Co., New Orleans	Pass. Cargo	1445.44	11	235-0 x 34-0 x 16-0	1150	5-8-20
Nicarao	Cuyamel Fruit Co., New Orleans	Pass. Cargo	1445.44	11	235-0 x 34-0 x 16-0	1150	6-5-20
San Teodoro	Eagle Oil Transport Co., Ltd., London	Tanker	5614	11	427-0 x 53-1 x 24-0	2850	12-18-20
Tenafly	U. S. Shipping Board	Cargo	4755	10½	392-0 x 52-0 x 29-0	2500	11-16-19
Kerhonkson	U. S. Shipping Board	Cargo	4755	10½	392-0 x 52-0 x 29-0	2500	12-13-19
Hinckley	U. S. Shipping Board	Cargo	4755	10½	392-0 x 52-0 x 29-0	2500	12-31-19

STATEN ISLAND SHIPBUILDING CO., MARINERS HARBOR, S. I., N. Y.

Algoma	U. S. Navy	Tug	1000	13	149-3 x 30-0 x 17-5	2000	6-12-19
Carrabasset	U. S. Navy	Tug	1000	13	149-3 x 30-0 x 17-5	2000	6-12-19
Contocook	U. S. Navy	Tug	1000	13	149-3 x 30-0 x 17-5	2000	1-12-20
Iuka	U. S. Navy	Tug	1000	13	149-3 x 30-0 x 17-5	2000	1-12-20
Keosauqua	U. S. Navy	Tug	1000	13	149-3 x 30-0 x 17-5	2000	2-26-20
Montcalm	U. S. Navy	Tug	1000	13	149-3 x 30-0 x 17-5	2000	2-26-20
Socony—No. 100	Standard Oil Co. of New York	Barge	402	...	150-0 x 27-0 x 11-0	.....	3-29-20
Socony—No. 101	Standard Oil Co. of New York	Barge	402	...	150-0 x 27-0 x 11-0	.....	4-17-20
Socony—No. 102	Standard Oil Co. of New York	Barge	402	...	150-0 x 27-0 x 11-0	.....	5-15-20
Socony—No. 103	Standard Oil Co. of New York	Barge	402	...	150-0 x 27-0 x 11-0	.....	5-21-20
Socony—No. 104	Standard Oil Co. of New York	Barge	402	...	150-0 x 27-0 x 11-0	.....	6-23-20
Socony—No. 105	Standard Oil Co. of New York	Barge	402	...	150-0 x 27-0 x 11-0	.....	6-11-20
Socony—No. 106	Standard Oil Co. of New York	Barge	402	...	150-0 x 27-0 x 11-0	.....	10-27-20
Veedol	Standard Oil Co. of New York	Launch	189	8.5	108-0 x 25-0 x 11-8	300	6-2-20
Franklin	Tidewater Oil Co.	Tanker	1224	10	220-0 x 37-5 x 17-0	700	8-18-20
	Galena Signal Oil Co.	Tanker	2800	11.5	300-0 x 43-0 x 27-0	1800	12-31-20

ARTHUR D. STORY, ESSEX, MASS.

Gen. Wood	Geo. C. Harris Co., Grand Boule, Nfld.	Schr.	200	...	121-0 x 25-0 x 11-0	12-8-20
-----------	--	-------	-----	-----	---------------------	-------	---------

SUBMARINE BOAT CORP., NEWARK, N. J.

Riverside Bridge	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	1-7-20
Virginia Bridge	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	1-10-20
Des Moines Bridge	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	1-10-20
Plow City	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	1-17-20
Holyoke Bridge	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	1-27-20
New England	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	1-31-20
East Chicago	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	2-6-20
Anthracite Bridge	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	2-21-20
Fort Armstrong	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	2-28-20
Schuylkill Bridge	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	3-6-20
Noddle Island	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	3-9-20
Pittsburgh Bridge	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	3-16-20
Neshobee	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	3-25-20
Oronoke	U. S. Shipping Board	Cargo	3545	10.5	335-2 x 46-0 x 22-6	1500	3-25-20

1920 Construction Record of U. S. Yards

SUBMARINE BOAT CORP.,—Continued

Name or Yard No.	Name and Address of Owner	Type of Vessel	Gross Tonnage	Speed, Knots	Length, Breadth and Depth, Feet	I.H.P.	Date Launched
Wheeling Mold	U. S. Shipping Board	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	3-27-20
Italia	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	3-30-20
Suboatco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	4-13-20
Suedco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	4-15-20
Sunelisco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	4-23-20
Sutransco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	5- 6-20
Suholco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	5-19-20
Suportco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	5-22-20
Sudurco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	5-28-20
Sutermco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	5-29-20
Suelco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	6-11-20
Sutorpco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	6-18-20
Surculco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	6-24-20
Sunewco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	7- 2-20
Sumanco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	7- 9-20
Surico	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	7-17-20
Susherico	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	7-23-20
Suduffco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	8- 2-20
Sudawsonco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	8-17-20
Sulanierco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	8-23-20
Suscolanco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	8-30-20
Suremico	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	9-17-20
Surichco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	9-20-20
Suwarinco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	9-30-20
Sujameco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	10-20-20
Suwordenco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	10-22-20
Sugietenco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	11-17-20
Sunewarkco	Submarine Boat Corp.	Cargo	3545	10.5	355-2 x 46-0 x 22-6	....	11-27-20

TANK SHIPBUILDING CORP., NEWBURGH, N. Y.

No. 20	U. S. Navy	Barge	....	7	160-0 x 25-0 x 11-0	175	10-25-19
No. 21	U. S. Navy	Barge	....	7	160-0 x 25-0 x 11-0	175	11-15-19
No. 22	U. S. Navy	Barge	....	7	160-0 x 25-0 x 11-0	175	11-27-19
No. 23	U. S. Navy	Barge	....	7	160-0 x 25-0 x 11-0	175	4- 6-20
No. 24	U. S. Navy	Barge	....	7	160-0 x 25-0 x 11-0	175	4-20-20
Navegadora No. 100	Tampico Navigation Co.	Barge	754	N.P.	183-0 x 49-0 x 10-0	....	3-30-20
Navegadora No. 101	Tampico Navigation Co.	Barge	754	N.P.	183-0 x 49-0 x 10-0	....	5- 1-20
Navegadora No. 102	Tampico Navigation Co.	Barge	754	N.P.	183-0 x 49-0 x 10-0	....	6-26-20
Navegadora No. 103	Tampico Navigation Co.	Barge	754	N.P.	183-0 x 49-0 x 10-0	....	7-27-20
Navegadora No. 104	Panuco Oil Exploration Co.	Barge	754	N.P.	183-0 x 49-0 x 10-0	....	12-15-20
Topila	Panuco Oil Exploration Co.	Tug	200	....	120-0 x 25-0 x 6-0	....	8-19-20
Crew Levick	Henry L. Doherty Co.	Barge	514	N.P.	160-0 x 36-0 x 10-0	....	6- 4-20
Sunset Una	Sunset Fuel Oil Company	Barge	1200	N.P.	200-0 x 36-0 x 19-0	....	11-24-20

TEBO YACHT BASIN CO., BROOKLYN, N. Y.

Manuel Rionda	Sinclair Navigation Co. New York	Barge	1375	7½	210-0 x 44-0 x 14-0	800	4-22-20
Ormes	Oriental Navigation Co. Montreal	Fruit	1355	13½	227-0 x 33-8 x 16-0	1300	7-20-20
Ortiani	Oriental Navigation Co. Montreal	Fruit	1355	13½	227-0 x 33-8 x 16-0	1300	11- 6-20

TEXAS STEAMSHIP CO., BATH, ME.

Roanoke	Texas Steamship Co., New York	Tanker	6784	11½	415-10 x 56-0 x 32-9	3000	1- 3-20
†Solitaire	Texas Steamship Co., New York	Tanker	3350	9	315-0 x 43-6 x 27-6	1000	4- 3-20
Occidental	Texas Steamship Co., New York	Tanker	6727	11½	415-10 x 56-0 x 32-9	3000	5- 1-20
Harvester	Texas Steamship Co., New York	Tanker	6727	11½	415-10 x 56-0 x 32-9	3000	8-16-20
Reaper	Texas Steamship Co., New York	Tanker	6774	11½	415-10 x 56-0 x 32-9	3000	20-30-20

E. JAMES TULL, POCOMOKE CITY, MD.

*Lillian E. Kerr	J. W. Somerville, Gulfport, Miss.	Schr.	548	..	160-2 x 35-5 x 12-7	8-14-20
------------------	-----------------------------------	-------	-----	----	---------------------	------	---------

VIRGINIA SHIPBUILDING CORP., ALEXANDRIA, VA.

No. 6	U. S. Shipping Board	Cargo	6000	11	402-0 x 53-0 x 34-0	2800	1-10-20
No. 7	U. S. Shipping Board	Cargo	6000	11	402-0 x 53-0 x 34-0	2800	2-28-20
No. 8	U. S. Shipping Board	Cargo	6000	11	402-0 x 53-0 x 34-0	2800	4- 2-20
No. 9	U. S. Shipping Board	Cargo	6000	11	402-0 x 53-0 x 34-0	2800	6-26-20
No. 10	U. S. Shipping Board	Cargo	6000	11	402-0 x 53-0 x 34-0	2800	11-20-20

South Atlantic and Gulf

ALABAMA DRY DOCK & SHIPBUILDING CO., MOBILE, ALA.

Mamei	Panama R. R. & S. S. Co.	Barge	7500	..	352-0 x 52-0 x 33-0	5- 1-20
-------	--------------------------	-------	------	----	---------------------	------	---------

AMERICAN SHIPBUILDING & DOCK CORP., BEAUFORT, S. C.

†Beaufort Yard	Cuban Coal Co., Havana	Barge	1200	7-15-20
----------------	------------------------	-------	------	----	-------	------	---------

BEAUMONT SHIPBUILDING & DRY DOCK CO., BEAUMONT, TEX.

Albert D. Cummings	A. D. Cummings & Co., Philadelphia	Schr.	1163	..	189-0 x 41-1 x 19-8	....	12-19-19
Marie F. Cummings	A. D. Cummings & Co., Philadelphia	Schr.	1163	..	189-0 x 41-1 x 19-8	....	1- -20

DOULLUT & WILLIAMS SHIPBUILDING CO., INC., NEW ORLEANS

New Orleans	U. S. Shipping Board	Cargo	6631	11	395-6 x 55-0 x 34-11	2800	1-24-20
Potter	U. S. Shipping Board	Cargo	6631	11	395-6 x 55-0 x 34-11	2800	2-14-20
Wichita	U. S. Shipping Board	Cargo	6631	11	395-6 x 55-0 x 34-11	2800	3-12-20
City of Elwood	U. S. Shipping Board	Cargo	6631	11	395-6 x 55-0 x 34-11	2800	4-10-20
Jeff Davis	U. S. Shipping Board	Cargo	6631	11	395-6 x 55-0 x 34-11	2800	10-30-20
Galveston	U. S. Shipping Board	Cargo	6631	11	395-6 x 55-0 x 34-11	2800	12-28-20

GEORGE A. FULLER CO., WILMINGTON, N. C.

Cranford	U. S. Shipping Board	Cargo	6501	11	395-6 x 55-0 x 34-11	2800	9- 1-19
City of Omaha	U. S. Shipping Board	Cargo	6501	11	395-6 x 55-0 x 34-11	2800	11-15-19
City of Joliet	U. S. Shipping Board	Cargo	6501	11	395-6 x 55-0 x 34-11	2800	1-29-20
Winston-Salem	U. S. Shipping Board	Cargo	6501	11	395-6 x 55-0 x 34-11	2800	12-27-19
Nemaha	U. S. Shipping Board	Cargo	6501	11	395-6 x 55-0 x 34-11	2800	4-24-20
City of Fort Worth	U. S. Shipping Board	Cargo	6501	11	395-6 x 55-0 x 34-11	2800	6-19-20
Hybert	U. S. Shipping Board	Cargo	6501	11	395-6 x 55-0 x 34-11	2800	7-24-20
Syros	U. S. Shipping Board	Cargo	6501	11	395-6 x 55-0 x 34-11	2800	9-18-20

HENDERSON SHIPBUILDING CO., MOBILE, ALA.

*Henderson No. 1	E. D. Park, Havana, Cuba	Barge	400	..	91-0 x 27-0 x 8-0	....	6-20
*Henderson No. 2	E. D. Park, Havana, Cuba	Barge	400	..	91-0 x 27-0 x 8-0	....	8-20
*Henderson No. 3	Cuba Cattle Co.	Barge	400	..	91-0 x 27-0 x 8-0	....	10-20
*Henderson No. 4	Cuba Cattle Co.	Barge	400	..	91-0 x 27-0 x 8-0	....	11-20

1920 Construction Record of U. S. Yards

JOHNSON IRON WORKS, NEW ORLEANS							
Name or Yard No.	Name and Address of Owner	Type of Vessel	Gross Tonnage	Speed, Knots	Length, Breadth and Depth, Feet	I.H.P.	Date Launched
New England Oil Corp.							
Barge 650 200-0 x 42-8 x 8-3							
MERRILL-STEVENS SHIPBUILDING CORP., JACKSONVILLE, FLA.							
Pinnellas	U. S. Shipping Board	Cargo	3853	12	346-6 x 27-6 x 48-0	2000	3- 2-20
Wekika	U. S. Shipping Board	Cargo	3853	12	346-6 x 27-6 x 48-0	2000	12-24-19
Chickamauga	U. S. Shipping Board	Cargo	3853	12	346-6 x 27-6 x 48-0	2000	8- 2-19
MOBILE SHIPBUILDING CO., MOBILE, ALA.							
Oklahoma City	U. S. Shipping Board	Cargo	3545	11	324-6 x 46-0 x 27-8	1600	2-18-20
Capitol of Nebraska	U. S. Shipping Board	Cargo	3545	11	324-6 x 46-0 x 27-8	1600	5- 1-20
Houston	U. S. Shipping Board	Cargo	3545	11	324-6 x 46-0 x 27-8	1600	6-26-20
City of Lordsburg	U. S. Shipping Board	Cargo	3545	11	324-6 x 46-0 x 27-8	1600	5-15-20
Atlanta of Texas	U. S. Shipping Board	Cargo	3545	11	324-6 x 46-0 x 27-8	1600	7-14-20
MURNAN SHIPBUILDING CO., MOBILE, ALA.							
Luther E. Hooper	Eastern Transportation Co., Baltimore, Md.	Schr.	4000	..	281-6 x 46-0 x 26-0	....	10-20
No. 1	Marimon Mexican Oil Corp., Tampico, Mexico	Barge	1250	..	175-0 x 40-0 x 8-6	....	10-20
No. 2	Marimon Mexican Oil Corp., Tampico, Mexico	Barge	1250	..	175-0 x 40-0 x 8-6	....	11-20
No. 3	Marimon Mexican Oil Corp., Tampico, Mexico	Barge	1250	..	175-0 x 40-0 x 8-6	....	11-20
No. 4	Marimon Mexican Oil Corp., Tampico, Mexico	Barge	1250	..	175-0 x 40-0 x 8-6	....	11-20
No. 5	Marimon Mexican Oil Corp., Tampico, Mexico	Barge	1250	..	175-0 x 40-0 x 8-6	....	11-20
No. 6	Marimon Mexican Oil Corp., Tampico, Mexico	Barge	1250	..	175-0 x 40-0 x 8-6	....	12-20
No. 7	Marimon Mexican Oil Corp., Tampico, Mexico	Barge	1250	..	175-0 x 40-0 x 8-6	....	12-20
Marie Hooper	Eastern Transportation Co., Baltimore, Md.	Schr.	4000	..	281-6 x 46-0 x 26-0	....	12-20
No. 1	Lykes Brothers, Havana, Cuba	Barge	150	..	90-0 x 30-0 x 7-0	....	12-20
No. 2	Lykes Brothers, Havana, Cuba	Barge	150	..	90-0 x 30-0 x 7-0	....	12-20
No. 3	Lykes Brothers, Havana, Cuba	Barge	150	..	90-0 x 30-0 x 7-0	....	12-20
No. 1	A. J. Higgins Lumber & Export Co., Havana, Cuba	Barge	225	..	110-0 x 30-0 x 7-0	....	12-20
No. 2	A. J. Higgins Lumber & Export Co., Havana, Cuba	Barge	225	..	110-0 x 30-0 x 7-0	....	12-20
.....	U. S. Engineers (War Department), Florence, Ala.	Barge	500	..	(Ten of these were built)	....	.....
No. 1	W. G. Coyle Coal Co., New Orleans	Barge	700	..	.....	....	.....
No. 2	W. G. Coyle Coal Co., New Orleans	Barge	700	..	.....	....	.....
.....	W. G. Coyle Coal Co., New Orleans	Barge	1000	..	.....	....	.....
.....	Zarraga & Co., Caibarien, Cuba	Barge	250	..	.....	....	.....
.....	Oscar Astudillo, Havana, Cuba	Barge	250	..	.....	....	.....
.....	Murra: Stevedore Co., Mobile, Ala.	Barge	25	..	.....	....	.....
.....	Murnan Shipbuilding Corp.	Barge	300	..	.....	....	.....
.....	Lamborn & Co., Havana, Cuba	Barge	250	..	.....	....	.....
.....	Lamborn & Co., Havana, Cuba	Barge	250	..	.....	....	.....
TERRY SHIPBUILDING CORP., SAVANNAH, GA.							
Darden	U. S. Mex. Oil Corporation	Tanker	7500	11½	405-0 x 51-0 x 30-0	2800	5-20-20
Dartford	U. S. Mex. Oil Corporation	Tanker	7500	11½	405-0 x 51-0 x 30-0	2800	7- 8-20
Gladyse	U. S. Mex. Oil Corporation	Tanker	7500	11½	405-0 x 51-0 x 30-0	2800	9- 7-20
Lilmae	U. S. Mex. Oil Corporation	Tanker	7500	11½	405-0 x 51-0 x 30-0	2800	.....
Pearlton	U. S. Mex. Oil Corporation	Tanker	7500	11½	405-0 x 51-0 x 30-0	2800	11-11-20
U. S. MARITIME CORP., BRUNSWICK, GA.							
Von E/dor	U. S. Public Health Service, Boston	Tug	125	11	90-0 x 18-0 x 9-0	250	2-20
McClintic	U. S. Public Health Service, Norfolk, Va.	Tug	125	11	90-0 x 18-0 x 9-0	250	2-20

Pacific Coast

AMES SHIPBUILDING & DRY DOCK CO., SEATTLE							
Name or Yard No.	Name and Address of Owner	Type of Vessel	Gross Tonnage	Speed, Knots	Length, Breadth and Depth, Feet	I.H.P.	Date Launched
No. 24	U. S. Shipping Board	Cargo	5866	12	450-0 x 58-0 x 35-0	3000	1-22-20
No. 25	U. S. Shipping Board	Cargo	5866	12	450-0 x 58-0 x 35-0	3000	2-19-20
BETHLEHEM SHIPBUILDING CORPORATION, LTD., SAN FRANCISCO							
UNION PLANT, SAN FRANCISCO							
Dungannon	U. S. Shipping Board	Tanker	7257	11	435-0 x 56-0 x 33-6	2700	4- 3-20
Durango	U. S. Shipping Board	Tanker	7257	11	435-0 x 56-0 x 33-6	2700	4-23-20
Halo	U. S. Shipping Board	Tanker	7257	11	435-0 x 56-0 x 33-6	2700	5-15-20
Halsey	U. S. Shipping Board	Tanker	7257	11	435-0 x 56-0 x 33-6	2700	6-10-20
Halway	U. S. Shipping Board	Tanker	7257	11	435-0 x 56-0 x 33-6	2700	7- 1-20
Pomona	U. S. Shipping Board	Cargo	7383	10½	440-0 x 56-0 x 38-0	2700	2-18-20
H-nley	U. S. Shipping Board	Cargo	7383	10½	440-0 x 56-0 x 38-0	2700	10- 5-20
Hannawa	U. S. Shipping Board	Cargo	7383	10½	440-0 x 56-0 x 38-0	2700	5-11-20
William H. Doheny	Pan American Petroleum Trans. Co.	Tanker	7250	11	435-0 x 56-0 x 33-6	2700	8-20-20
Franklin K. Lane	Pan American Petroleum Trans. Co.	Tanker	7250	11	435-0 x 56-0 x 33-6	2700	8-31-20
Crampton Anderson	Pan American Petroleum Trans. Co.	Tanker	7250	11	435-0 x 56-0 x 33-6	2700	11-30-20
Algonquin	Standard Transp. Co. of Delaware	Tanker	7250	11	435-0 x 56-0 x 33-6	2700	8-23-20
W. S. Miller	Standard Oil Co. of Delaware	Tanker	7250	11	435-0 x 56-0 x 33-6	2700	10-28-20
Yorba Linda	General Petroleum Co.	Tanker	7250	11	435-0 x 56-0 x 33-6	2700	11-22-20
J. F. DUTHIE & CO., SEATTLE							
West Hesseltime	U. S. Shipping Board	Cargo	5588	10.5	410-5½ x 54-0 x 30-6	2800	11-22-19
West L'an	U. S. Shipping Board	Cargo	5587	10.5	410-5½ x 54-0 x 30-6	2800	12-20
West Campgaw	U. S. Shipping Board	Cargo	5565	10.5	410-5½ x 54-0 x 30-6	2800	1-31-20
West Mahwah	U. S. Shipping Board	Cargo	5586	10.5	410-5½ x 54-0 x 30-6	2800	4-20-20
Griffco	James Griffiths & Sons, Seattle	Cargo	1463	11	220-0 x 40-0 x 21-0	1400	8-18-20
Grifidu	James Griffiths & Sons, Seattle	Cargo	1484	11	220-0 x 40-0 x 21-0	1400	9-10-20
HANLON DRY DOCK & SHIP BLDG. CO., EAST OAKLAND, CAL.							
Derblay	U. S. Shipping Board	Cargo	5500	11	.....	2200	1- 6-20
Jeptha	U. S. Shipping Board	Cargo	5500	11	.....	2200	7- 1-20
Medon	U. S. Shipping Board	Cargo	5500	11	.....	2200	8- 2-20
Memnon	U. S. Shipping Board	Cargo	5500	11	.....	2200	9-29-20
LOS ANGELES SHIPBUILDING & DRY DOCK CO., LOS ANGELES							
West Hixton	U. S. Shipping Board	Cargo	5600	11½	410-0 x 54-0 x 29-9	3500	1-23-20
Las Vegas	U. S. Shipping Board	Cargo	5600	11½	410-0 x 54-0 x 29-9	3500	2-18-20
Crown City	U. S. Shipping Board	Cargo	5600	11½	410-0 x 54-0 x 29-9	3500	3-20-20
West Holbrook	U. S. Shipping Board	Cargo	5600	11½	410-0 x 54-0 x 29-9	3500	4-17-20
Topa Topa	U. S. Shipping Board	Cargo	5600	11½	410-0 x 54-0 x 29-9	3500	6-22-20
Culberson	U. S. Shipping Board	Cargo	5600	11½	410-0 x 54-0 x 29-9	3500	7-29-20
West Honaker	U. S. Shipping Board	Cargo	5600	11½	410-0 x 54-0 x 29-9	3500	9-25-20
West Cusseta	U. S. Shipping Board	Cargo	5600	11½	410-0 x 54-0 x 29-9	3500	11-10-20

1920 Construction Record of U. S. Yards

MAIN STREET IRON WORKS, SAN FRANCISCO									
Name or Yard No.	Name and Address of Owner	Type of Vessel	Gross Tonnage	Speed, Knots	Length, Feet	Breadth and Depth, Feet	I.H.P.	Date Launched	
Sea Lion	Ship Owners & Merchants Tug Boat Company	Tug	.....	..	150-0 x 30-0 x 17-0	800	.....	.....
Sea Monarch	Ship Owners & Merchants Tug Boat Company	Tug	.....	..	150-0 x 30-0 x 17-0	800	.....	.....
Sea Ranger	Ship Owners & Merchants Tug Boat Company	Tug	.....	..	150-0 x 30-0 x 17-0	800	.....	.....
Sea Scout	Ship Owners & Merchants Tug Boat Company	Tug	.....	..	150-0 x 30-0 x 17-0	800	.....	.....
MOORE SHIPBUILDING CO., OAKLAND, CAL.									
Mursa	U. S. Shipping Board	Cargo	6085	12	402-6 x 53-0 x 34-6	2800	7-23-20		
Narbo	U. S. Shipping Board	Cargo	6085	15	402-6 x 53-0 x 34-6	2800	4-18-20		
Narcissus	U. S. Shipping Board	Cargo	6085	15	402-6 x 53-0 x 34-6	2800	4-18-20		
Meton	U. S. Shipping Board	Tanker	7311	14	425-0 x 57-0 x 33-0	2800	4-18-20		
Mevania	U. S. Shipping Board	Tanker	7311	14	425-0 x 57-0 x 33-0	2800	6-26-20		
Stockton	U. S. Shipping Board	Tanker	7294	16	425-0 x 57-0 x 33-0	2800	8-28-20		
Vacuum	Vacuum Oil Co., New York	Tanker	7009	58	425-0 x 57-0 x 33-0	3200	5- 1-20		
S. C. T. Dodd	Standard Oil Co., N. J.	Tanker	7009	58	425-0 x 57-0 x 33-0	3200	10-16-20		
M. F. Elliott	Standard Oil Co., N. J.	Tanker	7009	58	425-0 x 57-0 x 33-0	3200	11-13-20		
Thomas H. Wheeler	Standard Oil Co., N. J.	Tanker	7009	58	425-0 x 57-0 x 33-0	3200	12- 5-20		
PACIFIC COAST SHIPBUILDING CO., SAN FRANCISCO									
No. 1	U. S. Shipping Board	Cargo	6082	11	402-6 x 53-0	2800	2-18-20		
No. 2	U. S. Shipping Board	Cargo	6082	11	402-6 x 53-0	2800	8- 3-20		
No. 3	Anglo-Saxon Oil Co. of California	Tanker	1862	..	200-0 x 38-0	520	11-27-20		
No. 4	Anglo-Saxon Oil Co. of California	Barge	188	..	120-0 x 38-0	180	8-16-20		
PACIFIC MARINE & CONSTRUCTION CO., SAN DIEGO, CAL.									
Cuvamaca	U. S. Shipping Board	Tanker	7500	10½	434-0 x 54-0 x 36-0	2800	6-12-20		
San Pasqual	U. S. Shipping Board	Tanker	7500	10½	434-0 x 54-0 x 36-0	2800	6-28-20		
J. H. PRICE CONSTRUCTION CO., HOUGHTON, WASH.									
*† Muriel	Muriel Motorship Corp., Seattle	Cargo	2220	11½	260-0 x 46-0 x 26-0	1280	6-26-20		
ST. HELENS SHIPBUILDING CO., ST. HELENS, ORE.									
.....	Chas. R. McCormick & Co., San Francisco	Schr.	2500	13	250-0 x 46-0 x 21-0	1400	4-20		
SOUTHWESTERN SHIPBUILDING CO., LOS ANGELES									
West Nilus	U. S. Shipping Board	Cargo	5980	10½	410-5½ x 54-0 x 29-9	2800	1- 4-20		
West Nivaria	U. S. Shipping Board	Cargo	5980	10½	410-5½ x 54-0 x 29-9	2800	2- 8-20		
West Nomentum	U. S. Shipping Board	Cargo	5980	10½	410-5½ x 54-0 x 29-9	2800	3-22-20		
West Norranus	U. S. Shipping Board	Cargo	5980	10½	410-5½ x 54-0 x 29-9	2800	4-27-20		
West Notus	U. S. Shipping Board	Cargo	5980	10½	410-5½ x 54-0 x 29-9	2800	5-25-20		
Hollywood	U. S. Shipping Board	Cargo	5980	10½	410-5½ x 54-0 x 29-9	2800	6-25-20		
Mary Luckenbach	Luckenbach S. S. Co.	Tanker	5607	10½	410-5½ x 54-0 x 29-9	2800	11- 1-20		
G. M. STANDIFER CONSTRUCTION CORP., PORTLAND, ORE.									
Abercos	U. S. Shipping Board	Cargo	6224	11	416-0 x 53-0 x 34-0	2800	12-29-20		
Pawlet	U. S. Shipping Board	Cargo	6224	11	416-0 x 53-0 x 34-0	2800	1-20-20		
Bearport	U. S. Shipping Board	Cargo	6224	11	416-0 x 53-0 x 34-0	2800	1-31-20		
Arcturus	Nafra Co., Inc.	Cargo	6094	11	416-0 x 53-0 x 34-0	2500	3-31-20		
Aquarius	Nafra Co., Inc.	Cargo	6094	11	416-0 x 53-0 x 34-0	2500	4-20-20		
Argus	Nafra Co., Inc.	Cargo	6094	11	416-0 x 53-0 x 34-0	2500	6- 5-20		
Antinous	Nafra Co., Inc.	Cargo	6094	11	416-0 x 53-0 x 34-0	2500	6-22-20		
Apus	Nafra Co., Inc.	Cargo	6094	11	416-0 x 53-0 x 34-0	2500	7-15-20		
John Worthington	Standard Oil Company of N. J., N. Y.	Tanker	8250	10½	477-0 x 60-0 x 37-0	2800	11-15-20		
W. H. Libby	Standard Oil Company of N. J., N. Y.	Tanker	8250	10½	477-0 x 60-0 x 37-0	2800	12-15-20		
W. F. STONE & SON, OAKLAND, CAL.									
* Sea Monarch	Shipowners Tug Co.—San Francisco	Tug	500	12	150-0 x 32-0 x 17-0	1000	4-10-20		
* Sea Scout	Shipowners Tug Co.—San Francisco	Tug	500	12	150-0 x 32-0 x 17-0	1000	7-15-20		
* Sea Ranger	Shipowners Tug Co.—San Francisco	Tug	500	12	150-0 x 32-0 x 17-0	1000	9-20-20		
* Mikioi	Young Bros. Ltd., Honolulu	Tug	100	14	95-0 x 21-0 x 10-0	500	7-25-20		
* Doris Crane	Wightman Crane—San Francisco	Schr.	350	10	138-0 x 32-0 x 14-0	150	11-22-20		
UNION CONSTRUCTION CO., SAN FRANCISCO									
Hayden	U. S. Shipping Board	Cargo	6042	11	402-0 x 53-0 x 34-6	2800	1-24-20		
Haymon	U. S. Shipping Board	Cargo	6042	11	402-0 x 53-0 x 34-6	2800	4-17-20		
Haynie	U. S. Shipping Board	Cargo	6042	11	402-0 x 53-0 x 34-6	2800	6- 5-20		
Heber	U. S. Shipping Board	Cargo	6042	11	402-0 x 53-0 x 34-6	2800	8- 7-20		
Charlie Watson	Standard Oil Co. of California, San Francisco	Tanker	1770	10	262-0 x 37-0 x 21-0	1100	8-14-20		
Liebre	General Petroleum Corp., San Francisco	Tanker	6895	11	435-0 x 56-0 x 33-6	3000	12-15-20		
WESTERN PIPE & STEEL CO., SAN FRANCISCO									
..... U. S. Shipping Board		Cargo	8800	11	.....	2800	3-20-20		

Great Lakes

AMERICAN SHIPBUILDING CO., CLEVELAND CLEVELAND YARD									
Name or Yard No.	Name and Address of Owner	Type of Vessel	Gross Tonnage	Speed, Knots	Length, Feet	Breadth and Depth, Feet	I.H.P.	Date Launched	
Baccarat	Independent S. S. Co.	Cargo	2284	9	261-0 x 43-6 x 24-2½	1200	3- 2-20		
Romagne	Independent S. S. Co.	Cargo	2284	9	261-0 x 43-6 x 24-2½	1200	3-27-20		
Seneca	Independent S. S. Co.	Cargo	2284	9	261-0 x 43-6 x 24-2½	1200	4-29-20		
DETROIT YARD									
Juvigny	Independent S. S. Co.	Cargo	2309	9	261-0 x 43-6 x 24-2½	1200	2-28-20		
Montfaucon	Independent S. S. Co.	Cargo	2309	9	261-0 x 43-6 x 24-2½	1200	3-13-20		
Chippewa	Independent S. S. Co.	Cargo	2309	9	261-0 x 43-6 x 24-2½	1200	3-27-20		
Cayuga	Independent S. S. Co.	Cargo	2309	9	261-0 x 43-6 x 24-2½	1200	4-22-20		
Kiowa	Independent S. S. Co.	Cargo	2309	9	261-0 x 43-6 x 24-2½	1200	5-18-20		
Oneida	Independent S. S. Co.	Cargo	2309	9	261-0 x 43-6 x 24-2½	1200	5- 4-20		
Onondaga	Independent S. S. Co.	Cargo	2309	9	261-0 x 43-6 x 24-2½	1200	5- 9-20		
Merton E. Farr	Zenith S. S. Co.	Cargo	8349	10.2	600-0 x 60-0 x 32-0	2200	9-11-20		
James Davidson	Globe S. S. Co.	Cargo	8349	10.2	600-0 x 70-0 x 32-0	2200	10- 9-20		
TORAIN YARD									
L. M. Bowers	Continental S. S. Co.	Cargo	8262	10.2	600-0 x 60-0 x 32-0	2200	6-18-20		
H. H. Porter	Brier Hill S. S. Co.	Cargo	8262	10.2	600-0 x 60-0 x 32-0	2200	7-30-20		
ANCHOR SHIPBUILDING CO., WASHBURN, WIS.									
No. 1	Hudson & Athens Ferry Co.	Ferry	.....	8½	115-0 x 44-0 x 12-0	300	.....	
BURGER BOAT CO., MANITOWOC, WIS.									
*Pointer	U. S. Shipping Board	Tug	176	12	100-0 x 25-0 x 12-0	650	.....	
*Spaniel	U. S. Shipping Board	Tug	176	12	100-0 x 25-0 x 12-0	650	.....	
*Beagle	U. S. Shipping Board	Tug	176	12	100-0 x 25-0 x 12-0	650	.....	
DACHEL-CARTER SHIPBUILDING CO., BENTON HARBOR, MICH.									
.....	U. S. Shipping Board	Tug	.....	.....	100-0	.....	.....
FABRICATED SHIP CORP., MILWAUKEE									
Maj. General Story	Coast Artillery Corps, War Dept.	Mine layer	910	12	172-6 x 33-0 x 17-0	600	9-11-19		
Maj. General Randolph	Coast Artillery Corps, War Dept.	Mine layer	910	12	172-6 x 33-0 x 17-0	600	11-11-19		
Maj. General Bell	Coast Artillery Corps, War Dept.	Mine layer	910	12	172-6 x 33-0 x 17-0	600	11-26-19		
Brig. General Kirby	Coast Artillery Corps, War Dept.	Mine layer	910	12	172-6 x 33-0 x 17-0	600	10- 4-19		
Brig. General Baird	Coast Artillery Corps, War Dept.	Mine layer	910	12	172-6 x 33-0 x 17-0	600	10-23-19		
Colonel Whistler	Coast Artillery Corps, War Dept.	Mine layer	910	12	172-6 x 33-0 x 17-0	600	1-15-20		
Colonel Todd	Coast Artillery Corps, War Dept.	Mine layer	910	12	172-6 x 33-0 x 17-0	600	1-31-20		
Colonel Harrison	Coast Artillery Corps, War Dept.	Mine layer	910	12	172-6 x 33-0 x 17-0	600	4- 3-20		

1920 Construction Record of U. S. Yards

KELLEY-SPEAR CO., BATH, ME.							
Name or Yard No.	Name and Address of Owner	Type of Vessel	Gross Tonnage	Speed, Knots	Length, Breadth and Depth, Feet	I.H.P.	Date to be Launched
*No. 199	Staples Transportation Co., Fall River, Mass.	Barge	1625	..	246-0 x 41-0 x 20-0	....	Summer
No. 200	Staples Transportation Co., Fall River, Mass.	Barge	1625	..	246-0 x 41-0 x 20-0	....	Summer
KYLE & PURDY, NEW YORK							
Crane	East Coast Fisheries Co., New York	Trawler	....	11	140-25 x 25-0 x 14-58	500	....
Halcyon	East Coast Fisheries Co., New York	Trawler	....	11	140-25 x 25-0 x 14-58	500	....
No. 151	International Petroleum Co., New York	Tender	....	..	126-75 x 32-0 x 14-5	450	....
No. 152	Atlantic Gulf Oil Corp., New York	Tender	....	..	126-75 x 32-0 x 14-5	450	....
NEW BEDFORD DRY DOCK CO., FAIRHAVEN, MASS.							
*No. 1	Builders Account	Schr.	275	..	105-0 x 27-0 x 11-8	....	1-15-21
*No. 2	Builders Account	Schr.	600	..	145-0 x 35-0 x 14-6	....	3- 1-21
NEWBURGH SHIPYARDS, INC., NEWBURGH, N. Y.							
Henry D. Whiton	The Union Sulphur Co.	Pass. Cargo	4421	13	356-0 x 51-9 x 32-5½	3000	....
Comayagua	Cuyariel Fruit Co.	Pass. Cargo	2400	14½	301-6 x 42-0 x 17-0	3000	....
NEWPORT NEWS SHIPBUILDING & DRY DOCK CO., NEWPORT NEWS, VA.							
Maryland	U. S. Navy	Battleship	....	21	624-0 x 96-0 x 47-2	....	....
West Virginia	U. S. Navy	Battleship	....	..	624-0 x 96-0 x 47-2	....	....
Constellation	U. S. Navy	Battleship	....	33	874-0 x 105-4 x 48-0	....	....
Ranger	U. S. Navy	Battleship	....	33	874-0 x 105-4 x 48-0	....	....
Iowa	U. S. Navy	Battleship	....	23	684-0 x 105-9½ x 50-2	....	....
Agwistone	Atlantic Gulf & West Indies Steamship Lines	Tanker	....	10½	516-0 x 68-0 x 38-0	3000	....
Agwismith	Atlantic Gulf & West Indies Steamship Lines	Tanker	....	10½	516-0 x 68-0 x 38-0	3000	....
John D. Archbold	Standard Oil Co.	Tanker	....	10½	572-6 x 75-0 x 43-3	3600	....
Wm. Rockefeller	Standard Oil Co.	Tanker	....	10½	572-6 x 75-0 x 43-3	3600	....
NEW YORK SHIPBUILDING CORP., CAMDEN, N. J.							
Blue Hen State	U. S. Shipping Board	Pass. Cargo	10533	14	522-8 x 62-0 x 42-0	7000	Spring
Peninsula State	U. S. Shipping Board	Pass. Cargo	13500	18	535-2 x 72-0 x 50-0	12000	Spring
No. 259	Pacific Mail S. S. Co., San Francisco	Cargo	6870	11	435-8 x 56-3 x 33-4	3000	Winter
Yankee Arrow	Standard Transportation Co. of N. Y.	Cargo	7800	10½	485-2 x 62-6 x 39-6	3200	Spring
Empire Arrow	Standard Transportation Co. of N. Y.	Cargo	7800	10½	485-2 x 62-6 x 39-6	3200	Spring
Levant Arrow	Standard Transportation Co. of N. Y.	Cargo	7800	10½	485-2 x 62-6 x 39-6	3200	Summer
No. 266	Standard Transportation Co. of N. Y.	Cargo	7800	10½	485-2 x 62-6 x 39-6	3200	Summer
No. 263	Munson S. S. Co., New York	Pass. Cargo	6000	15½	432-3 x 57-6 x 34-6	5800	Summer
No. 264	Builder's Account	Cargo	6870	11	435-8 x 56-3 x 33-4	3000	Summer
No. 265	Builder's Account	Cargo	6870	11	435-8 x 56-3 x 33-4	3000	Fall
SPEDDEN SHIPBUILDING CO., BALTIMORE							
S. O. No. 5	Standard Oil Co. of N. J.	Barge	1050	..	206-7 x 38-0 x 15-6	....	3- 1-21
STANDARD SHIPBUILDING CORP., SHOOTERS ISLAND, N. Y.							
San Teodoro	Eagle Oil Transport Co., Ltd., London	Tanker	5614	11	427-0 x 53-1 x 24-0	2850	12-18-20
San Tiburcio	Eagle Oil Transport Co., Ltd., London	Tanker	5614	11	427-0 x 53-1 x 24-0	2850	1-29-21
San Ubaldo	Eagle Oil Transport Co., Ltd., London	Tanker	5614	11	427-0 x 53-1 x 24-0	2850	2-26-21
San Ugon	Eagle Oil Transport Co., Ltd., London	Tanker	5614	11	427-0 x 53-1 x 24-0	2850	3-26-21
STATEN ISLAND SHIPBUILDING CO., MARINERS HARBOR, S. I., N. Y.							
No. 726	American Sugar Refining Co.	Tanker	4400	11	360-0 x 50-0 x 29-0	2000	2-15-21
No. 728	War Department	Dredge	950	..	140-0 x 48-0 x 15-0	....	1-15-21
No. 107	Standard Oil Co. of New York	Barge	402	..	150-0 x 27-0 x 11-0	....	3-15-21
No. 108	Standard Oil Co. of New York	Barge	402	..	150-0 x 27-0 x 11-0	....	3-15-21
No. 109	Standard Oil Co. of New York	Barge	402	..	150-0 x 27-0 x 11-0	....	4- 1-21
No. 110	Standard Oil Co. of New York	Barge	1200	..	258-0 x 40-0 x 13-0	....	4-15-21
No. 111	Standard Oil Co. of New York	Barge	1200	..	258-0 x 40-0 x 13-0	....	5- 1-21
No. 112	Standard Oil Co. of New York	Barge	1200	..	258-0 x 40-0 x 13-0	....	5- 1-21
No. 736	Staples Transportation Co.	Tug	800	12	136-5 x 27-0 x 16-5	700	7-15-21
ARTHUR D. STORY, ESSEX, MASS.							
Adams	Builders Account	Schr.	400	..	162-0 x 32-0 x 13-0	....	Spring
No. 328	Capt. Felix Hogan, Somerville, Mass.	Schr.	140	..	118-0 x 25-0 x 12-0	60	4-21
No. 329	Captain Erickson, New York	Trawler	85	..	85-0 x 20-0 x 7-0	75	5-21
No. 330	Fred L. Davis, Gloucester, Mass.	Schr.	140	..	118-0 x 25-0 x 12-0	75	....
SUBMARINE BOAT CORP., NEWARK, N. J.							
No. 145	Builders Account	Cargo	3545	10½	335-6 x 46-0 x 22-6	1500	....
No. 147	Builders Account	Cargo	3545	10½	335-6 x 46-0 x 22-6	1500	....
No. 148	Builders Account	Cargo	3545	10½	335-6 x 46-0 x 22-6	1500	....
No. 149	Builders Account	Cargo	3545	10½	335-6 x 46-0 x 22-6	1500	....
No. 150	Builders Account	Cargo	3545	10½	335-6 x 46-0 x 22-6	1500	....
TEBO YACHT BASIN CO., BROOKLYN, N. Y.							
W. E. Ogilvie	Sinclair Navigation Co., New York City	Barge	1375	7½	210-0 x 44-0 x 14-0	800	12-28-20
TEXAS STEAMSHIP CO., BATH, ME.							
No. 31	Texas Steamship Co., New York	Tanker	6700	11½	415-10 x 56-0 x 32-9	3000	6-21
No. 32	Texas Steamship Co., New York	Tanker	6700	11½	415-10 x 56-0 x 32-9	3000	7-21
No. 33	Texas Steamship Co., New York	Barge	650	..	175-0 x 33-0 x 14-0	....	12-20
No. 34	Texas Steamship Co., New York	Barge	650	..	175-0 x 33-0 x 14-0	....	1-21
No. 35	Texas Steamship Co., New York	Barge	650	..	175-0 x 33-0 x 14-0	....	2-21
E. JAMES TULL, POCOMOKE CITY, MD.							
*No. 54	Atlas Dredging Co., New York	Tug	....	..	51-0 x 140-0 x 7-0	....	1-21
VINYARD SHIPBUILDING CO., MILFORD, DEL.							
No. 42	Builder's Account	Trawler	....	14	130-0 x 23-0 x 11-6	500	12-20-20
Robert J. Hughes	James Hughes Jr., New York	Tug	....	..	60-0 x 20-0	200	12-15-20
No. 44	Elizabeth City Lighterage Co., Elizabeth City, N. J.	Lighter	....	..	134-0 x 34-0 x 11-0	....	....

South Atlantic and Gulf

JOHN L. DOUGLASS, JACKSONVILLE, FLA.							
.....	Wilkinson Machine Co., Savannah, Ga.	Lighter	500	..	110-0 x 32-0 x 6-6	(Six to be built)	.....
.....	John L. Douglass	Schr.	3000	..	281-0 x 46-0 x 26-0	....	4-21
DOULLUT & WILLIAMS SHIPBUILDING CO., INC., NEW ORLEANS							
Ward	U. S. Shipping Board	Cargo	6631	11	395-6 x 55-0 x 34-11	2800	1-15-21
Oldham	U. S. Shipping Board	Cargo	6631	..	395-6 x 55-0 x 34-11	2800	2-18-21
GEORGE A. FULLER CO., WILMINGTON, N. C.							
San Lamberto	Eagle Oil Transport Co., Ltd., London	Tanker	6292	11	395-6 x 55-0 x 34-11	2800	1- 8-21
San Leon	Eagle Oil Transport Co., Ltd., London	Tanker	6292	11	395-6 x 55-0 x 34-11	2800	2- 5-21
No. 56	George A. Fuller Co., Wilmington	Tanker	6292	11	395-6 x 55-0 x 34-11	2800	5-28-21
No. 57	George A. Fuller Co., Wilmington	Tanker	6292	11	395-6 x 55-0 x 34-11	2800	6-25-21

1920 Construction Record of U.S. Yards

HENDERSON SHIPBUILDING CO., MOBILE, ALA.

Name or Yard No.	Name and Address of Owner	Type of Vessel	Gross Tonnage	Speed, Knots	Length, Breadth and Depth, Feet	I.H.P.	Date to be Launched
No. 5	Builders Account	Barge	400	..	91- x 27-0 x 8-0	....	12-21
JOHNSON IRON WORKS, NEW ORLEANS							
.....	New England Fuel Oil Co.	Oil Barge	650	..	200 x 42 x 8.25	....	3-15-21
.....	New England Fuel Oil Co.	Oil Barge	650	..	200 x 42 x 8.25	....	4-15-21
.....	New England Oil Corp.	Barge	600	..	200-0 x 42-8 x 8-3	....	1-20-21
.....	New England Oil Corp.	Barge	600	..	200-0 x 42-8 x 8-3	....	2-25-21
.....	Gulf Refining Co.	Barge	106	..	100-0 x 22-0 x 5-0	....	2-30-21
.....	Gulf Refining Co.	Barge	106	..	100-0 x 22-0 x 5-0	....	2-28-21
.....	Gulf Refining Co.	Launch	36	7	.....	60	3-4-21
.....	Gulf Refining Co.	Launch	.....	9	.....	42	2-15-21

Pacific Coast

BETHLEHEM SHIPBUILDING CORP., LTD., SAN FRANCISCO

UNION PLANT, SAN FRANCISCO

Name or Yard No.	Name and Address of Owner	Type of Vessel	Gross Tonnage	Speed, Knots	Length, Breadth and Depth, Feet	I.H.P.	Date to be Launched
Hambro	U. S. Shipping Board	Tanker	7257	11	435-0 x 56-0 x 33-6	2700	2-1-21
Hamer	U. S. Shipping Board	Tanker	7257	11	435-0 x 56-0 x 33-6	2700	2-15-21
Hammac	U. S. Shipping Board	Tanker	7257	11	435-0 x 56-0 x 33-6	2700	3-15-21
R. R. Kingsbury	Standard Oil Co. of California	Tanker	8600	11	440-0 x 58-0 x 41-0	3200	2-1-21
Frank G. Drum	Associated Oil Co.	Tanker	7250	11	435-0 x 56-0 x 33-6	2700	2-7-21
No. 5311	Standard Oil Co. of California	Tanker	10600	11	500-0 x 68-0 x 38-0	4000	5-15-21
No. 5312	Standard Oil Co. of California	Tanker	10600	11	500-0 x 68-0 x 38-0	4000	6-1-21
No. 5313	Standard Oil Co. of California	Tanker	10600	11	500-0 x 68-0 x 38-0	4000	6-15-21

LOS ANGELES SHIPBUILDING & DRY DOCK CO., LOS ANGELES

West O Rowa No. 30	U. S. Shipping Board	Cargo	5600	11½	410-0 x 54-0 x 29-9	3500	1-21
West Lewark No. 31	U. S. Shipping Board	Cargo	6700	11½	430-3 x 54-0 x 38-3	3500	2-21
West Faralou No. 32	U. S. Shipping Board	Cargo	6700	11½	430-3 x 54-0 x 38-3	3500	3-21
West Greylock No. 33	U. S. Shipping Board	Cargo	6700	11½	430-3 x 54-0 x 38-3	3500	4-21
West Prospect No. 34	U. S. Shipping Board	Cargo	6700	11½	430-3 x 54-0 x 38-3	3500	5-21
West Chopaka No. 35	U. S. Shipping Board	Cargo	6700	11½	430-3 x 54-0 x 38-3	3500	6-21

MOORE SHIPBUILDING CO., OAKLAND, CAL.

West Bohemian	U. S. Shipping Board	Tanker	7310	11	425-0 x 57-0 x 33-0	2800	....
West Tustum	U. S. Shipping Board	Tanker	7310	11	425-0 x 57-0 x 33-0	2800	....
West Lubrico	U. S. Shipping Board	Tanker	7310	11	425-0 x 57-0 x 33-0	2800	....
Manulani	Matson Navigation Co., San Francisco	Cargo	10000	12½	480-0 x 62-0 x 42-0	5500	....
Manukia	Matson Navigation Co., San Francisco	Cargo	10000	12½	480-0 x 62-0 x 42-0	5500	....
F. H. Hillman	Standard Oil Co., California	Tanker	4000	10½	330-0 x 46-0 x 27-0	2000	....
Gargoyle	Vacuum Oil Co., New York	Tanker	7000	11	425-0 x 57-0 x 33-0	3200	....
Tamiahua	S. P. Co. & Atlantic S. S. Line, N. Y.	Tanker	11000	11	500-0 x 71-0 x 39-0	4200	....
.....	Vacuum Oil Co., New York	Tanker	7000	11	425-0 x 57-0 x 33-0	3200	....

PACIFIC COAST SHIPBUILDING CO., SAN FRANCISCO

No. 1	U. S. Shipping Board	Cargo	6052	11	402-6 x 53-0	2800	12-22-20
No. 2	U. S. Shipping Board	Cargo	6052	11	402-6 x 53-0	2800	3-20-21

SOUTHWESTERN SHIPBUILDING CO., LOS ANGELES

Montebello	Union Oil Co. of California	Tanker	8600	11	440-0 x 58-0 x 39-0	3300	1-21
La Placencia	Union Oil Co. of California	Tanker	8600	11	440-0 x 58-0 x 39-0	3300	2-21
No. 23	Union Oil Co. of California	Tanker	4788	11½	392-0 x 51-0 x 30-6	2800	5-21
No. 24	Anglo-Saxon Petroleum Co., Ltd.	Tanker	5605	11	412-0 x 53-1 x 31-0	2600	2-21
No. 25	Anglo-Saxon Petroleum Co., Ltd.	Tanker	5605	11	412-0 x 53-1 x 31-0	2600	3-21
No. 26	Anglo-Saxon Petroleum Co., Ltd.	Tanker	5605	11	412-0 x 53-1 x 31-0	2600	4-21

G. M. STANDIFER CONSTRUCTION CORP., VANCOUVER, WASH.

Livingstone Roe	Standard Oil Company of N. J., New York	Tanker	8250	10½	477-0 x 60-0 x 37-0	2800	....
Albertolite	Imperial Oil Company, Ltd.	Tanker	8250	10½	477-0 x 60-0 x 37-0	2800	....
Calgarolite	Imperial Oil Company, Ltd.	Tanker	8250	10½	477-0 x 60-0 x 37-0	2800	....

UNION CONSTRUCTION CO., SAN FRANCISCO

R. J. Hanna	Standard Oil Co. of Cal., San Francisco	Tanker	6895	11	435-0 x 56-0 x 33-6	3000	....
No. 15	Anglo-Saxon Petroleum Corp., Ltd., London	Tanker	5605	11	412-0 x 53-5 x 31-0	2600	....
No. 21	Anglo-Saxon Petroleum Corp., Ltd., London	Tanker	5605	11	412-0 x 53-5 x 31-0	2600	....
No. 22	Anglo-Saxon Petroleum Corp., Ltd., London	Tanker	5605	11	412-0 x 53-0 x 31-0	2600	....
No. 23	Anglo-Saxon Petroleum Corp., Ltd., London	Tanker	5605	11	412-0 x 53-5 x 31-0	2600	....

Great Lakes

GREAT LAKES ENGINEERING WORKS, DETROIT

RIVER ROUGE PLANT

Name or Yard No.	Name and Address of Owner	Type of Vessel	Gross Tonnage	Speed, Knots	Length, Breadth and Depth, Feet	I.H.P.	Date to be Launched
Delphine	Horace Dodge, Detroit	Yacht	1200	16	250-5 x 35-5 x 22-0	3000	....

GREAT LAKES TOWING CO., CLEVELAND

No. 1	Great Lakes Towing Co., Cleveland	Tug	100	..	84-0 x 20-0 x 12-0	500	3-1-21
No. 2	Great Lakes Towing Co., Cleveland	Tug	100	..	84-0 x 20-0 x 12-0	500	3-1-21

GEORGE D. RYAN & SON, OSHKOSH, WIS.

No. 4	Fox River Navigation Co., Kaukauma, Wis.	Barge	500	..	142-0 x 24-0 x 7-0	....	Spring
No. 5	Fox River Navigation Co., Kaukauma, Wis.	Barge	500	..	142-0 x 24-0 x 7-0	....	Spring
.....	Fox River Navigation Co., Kaukauma, Wis.	Tug	45	10	75-0 x 10-0 x 6-0	100	Spring

SAGINAW SHIPBUILDING CO., SAGINAW, MICH.

Lake Miraflores	U. S. Shipping Board	Cargo	2677	9½	261-6 x 43-8 x 28-4	1500	1-8-21
-----------------	----------------------	-------	------	----	---------------------	------	--------

Inland Rivers

AMERICAN BRIDGE CO., PITTSBURGH

Name or Yard No.	Name and Address of Owner	Type of Vessel	Gross Tonnage	Speed, Knots	Length, Breadth and Depth, Feet	I.H.P.	Date to be Launched
27 Barges	La Belle Iron Works	Coal	350	..	140-0 x 26-0 x 9-0	....	Jan.-March
2 "	Gulf Refining Co.	Oil	740	..	175-0 x 40-0 x 11-0	....	Jan.
6 "	U. S. Govt.	Coal	410	..	145-0 x 24-0 x 12-0	....	March
25 "	Carnegie Steel Co.	Coal	475	..	175-0 x 26-0 x 11-0	....	Apr.-June

CHARLES WARD ENGINEERING WORKS, CHARLESTON, W. VA.

Vicksburg	War Dept., Inland & Coastwise Waterways Service	Tw. Sc. Tunnel	757	..	200-0 x 40-0 x 11-0	2237	1-1-21
-----------	---	----------------	-----	----	---------------------	------	--------

New Orleans Fleets Cover World

**Ships from Crescent City Ply All Trade Routes in Hand-
ling Vast Commerce of Mississippi Valley Gateway**

IN OTHER parts of the country, the importance of New Orleans as an outlet for the South is not generally appreciated. The enormous territory from which it draws exports, including the great Mississippi valley and Texas, insures it a diversity of

products, which makes it a trading port with every part of the civilized world. In grain, cotton, oil and meats, alone, it has a nucleus of a great export business, aside from the great variety of other products it handles. The Panama canal has been of great

assistance in developing it as a port. This route brings it nearer to the Orient and a number of lines trading across the Pacific are taking cargo at its wharves. The lines directly represented there and trading out of the port of New Orleans are:

To the United Kingdom:

Allen & Friedrichs.
Elder-Dempster line.
Harrison lines.
Head line.
International Mercantile Marine.
Leyland line.
Lykes Bros.
A. K. Miller.
Mississippi Shipping Co.
Tresdal, Plant & LaFonta.
Royal Holland Lloyd.
Steele S. S. line.
Texas Transport & Terminal Co.
M. & R. Warriner.
Manchester line.

To France:

Allen & Friedrichs.
French-American line.
Kerr S. S. Co.
Leyland line.
Norton, Lilly & Co.
Polish-American Navigation Corp.
Royal Holland Lloyd.
South Atlantic S. S. Co.
Steele S. S. line.
Texas Transport & Terminal Co.
Transportes Maritimes.
Tresdal, Plant & LaFonta.

To Germany:

W. H. Cowley.
Kerr S. S. Co.
Steele S. S. line.

To Portugal:

Cosmopolitan Shipping Co.,
(A. K. Miller.)

To Poland:

Polish-American Navigation Corp.

To Holland:

Allen & Friedrichs.
Holland-American line.
Lykes Bros.
A. K. Miller.
Tresdal, Plant & LaFonta.
Texas Transport & Terminal Co.
Royal Holland Lloyd.

To Mexico:

Beninate Fruit & Steamship Co.
Royal Holland Lloyd.
Compania Naviera Mexicana.
Gulf Navigation Co.
Mexican Fruit & S. S. Co.
Segari line.
Union Fruit Co.

Vaccare Bros.
New York Cuba Mail S. S. Co.
(Ward line.)
Wolvin line.

To the West Indies:

Acme Operating Corp.
Cuban-American line.
United Steamship Co.
Bluefields Fruit & S. S. Co.
Gulf Navigation Co.
Gulf & International S. S. Co.
Lykes Bros.
New Orleans & South America Steamship Co.
Porto Rico line.
Southern Pacific Steamship Co.
(Morgan line.)
United Fruit Co.
New York & Cuba Mail S. S. Co.,
(Ward line.)

To Africa:

Transportes Maritimes.

To Spain:

Compania Transmediterranea.
Kerr S. S. Co.
Norton, Lilly & Co.
Pinillos line.
A. K. Miller.
Tresdal, Plant & LaFonta.
Taya line.
Royal Holland Lloyd.

To Mediterranean:

Compania Transmediterranea.
Kerr S. S. Co.
Norton, Lilly & Co.
U. S. Navigation Co.
Tresdal, Plant & LaFonta.

To Belgium:

Allen & Friedrichs.
Kerr S. S. Co.
Lampert & Holt.
Leyland line.
Lloyd Royal Belge.
Tresdal, Plant & LaFonta.

To Tampa:

Gulf & Southern S. S. Co.

To Scandinavia:

Mississippi Shipping Co.
Norway Mexico Gulf line.
Polish-American Navigation Corp.
Scandinavian-American line.
Swedish-America-Mexico line.
Standard S. S. Co.

Transatlantic S. S. Co.
Tresdal, Plant & LaFonta.

To Italy:

Churchill lines.
W. H. Cowley.
Ente Transporte Cottoni.
Kerr S. S. Co.
A. K. Miller & Co.
Norton, Lilly & Co.
Tresdal, Plant & LaFonta.

To Central America:

Bluefields Fruit & S. S. Co.
Cuyamel Fruit Co.
Gulf Navigation Co.
Vaccare Bros. S. S. Co.
Kerr S. S. Co.
Mexican Fruit S. S. Co.
N. Y. & Cuba Mail Steamship Co.,
(Ward Line).
Norton, Lilly & Co.
Otic Co.
Southeastern Navigation Co.
United Steamship line.
United Fruit Co.
Wolvin line.

To South America:

Aluminum line.
United Steamship Co.
Cuyamel Fruit Co.
Gulf & International S. S. Co.
Hodge Ship Co.
Isthmian line.
Lampert & Holt.
Lykes Bros.
Lloyd Brazileire.
Mississippi Shipping Co.
New Orleans & South America S. S. Co.,
Norton, Lilly & Co.
J. H. W. Steele Co.
United Fruit Co.
New York & Cuba Mail S. S. Co.,
(Ward line.)

To the Orient:

Green Star line.
Kerr Steamship Co.
A. K. Miller.
Nippon Yusen Kaisha.
Norton, Lilly & Co.
Osaka Shosen Kaisha.
J. H. W. Steele Co.
Toyo Kisen Kaisha.
Transoceanic Co.
Texas Transport & Terminal Co.

Activities in the Marine Field

Latest News From Ships and Shipyards

Late Close Marks Successful Season

BY H. C. MEADE

WITH the passage through the Soo locks of the steamer A. E. R. SCHNEIDER, on Dec. 27, the shipping season of 1920 was brought to a close. This boat carried the last cargo in a shipping season marked by its lateness. The movement of lake tonnage was favorable with the exception of coal, which showed a loss from 1919. A feature of the past season was the addition of actual new tonnage to the lake marine, the first since this country entered the war. These four boats, which will add about 750,000 gross tons annually to the lake ore movement, were in commission during part of the 1920 season. Repairs, generally, are reported as being fewer this year than for some time past. Unless the work is imperative, repairs and alterations are being deferred. This has resulted in a dull winter for the shipyards. They report little work in sight. The annual meeting of the Lake Carriers' association was held in January. A number of fleet conferences are scheduled for February, at which captains and engineers will be brought together for discussion with the managers and owners, of problems aboard ship.

The 49 steamers and 2 barges of the Interlake Steamship Co., Cleveland, are laid up at South Chicago, Manitowoc, Detour, Duluth, Toledo, Milwaukee, Cleveland, Buffalo, and Ashtabula.

Capt. Loren Prescott, lightkeeper at Harbor Beach for more than 40 years, has retired. He was born in Ohio 76 years ago and began sailing on the Great Lakes at the age of 14 years.

The steamer A. E. R. SCHNEIDER was forced to abandon her efforts to tow the steamer J. H. SHEADLE from Marquette to Ashtabula after running into heavy weather. The SHEADLE was taken back to Marquette for the winter, while the SCHNEIDER proceeded to Ashtabula with the latest ore cargo ever delivered at a Lake Erie port. The steamer was more than a month on the down trip as she took her cargo at Marquette on Nov. 29. She pulled the steamer SHEADLE off the rocks at that port and was held to tow the disabled boat down. As she was bound from Marquette to Ashtabula she became fast in the ice at Moon Island. Tugs broke a channel through the ice for her.

The steamers SIR TREVOR DAWSON and the STADACONA, purchased recently by the Pioneer Steamship Co., have

been renamed. The DAWSON is now the CHARLES L. HUTCHINSON and the STADACONA is the W. H. MCGEAN.

The car ferry steamer PERE MARQUETTE 4 went ashore at North Point, Lake Superior, recently, but was released without lightering.

Capt. Barney Shean, master for the Great Lakes Towing Co., and for 45 years a sailor on the Great Lakes, died on Dec. 31 at Lorain. Three years ago he was stricken with influenza and never regained his health.

The ships of the Boland & Cornelius fleet are laid up for the winter at Buffalo, South Chicago, and Detroit.

Ferdinand Schlesinger, connected with the Milwaukee Coal & Gas Co. and the Newport Mining Co., Milwaukee, died recently on board a train bound for California.

William Livingstone, president Lake Carriers' association, has arranged with the superintendent of lighthouses to leave the downbound aids to navigation in the St. Marys river in commission as long as weather conditions will permit. After that the buoys will be taken up but the shore stations will be allowed to burn out.

The composite steamer LIVINGSTONE, owned by the Tri-State Steamship Co., was damaged by fire at the dock of the Cleveland Builders' Supply Co. recently. The fire originated from an overheated galley stove. The damage amounted to about \$5000.

The tug SPORT sank off Cove island in Lake Huron, during a recent gale. The crew and captain battled several hours in a heavy sea before they were rescued.

The steamer A. C. DINKEY, which went ashore at Detour shoal recently, was placed in drydock at Toledo with 200 damaged plates.

The steamer MAPLEHEAT, which sank near St. Gabriel recently, was raised by the Donnelly Wrecking Co. and placed in the drydock of the Collingwood Shipbuilding Co., Kingston.

The steamer FRANCIS WIDLAR, driven on the rocks at Pancake Shoals in a gale on Lake Superior several weeks

ago has been abandoned by the owners, the Valley Steamship Co., Cleveland, as a constructive total loss. The steamer was built in Cleveland in 1904.

A new bill of lading, embodying free in and out to vessels on the Great Lakes, was proposed at a joint meeting held recently in Buffalo by the bill of lading committees of the Lake Carriers' association and the Dominion Marine association, of Canada. The new bill of lading, it is expected, will provide for relieving of vessels of all expense on the long and short of the outturn of the grain.

A. J. Taggart, chief clerk of the Pittsburgh Steamship Co.'s store at Conneaut died on Dec. 18 of pleuropneumonia after an illness of but a few days. Mr. Taggart had been affiliated with the Conneaut store for about 12 years.

The steamer LIVINGSTONE, formerly owned by the Crosby Transportation Co., Milwaukee, has been purchased by the Tri-State Steamship Co., Cleveland. The vessel will be operated in the auto and package freight trades.

The name of the steamer PATHFINDER, owned by the United Steamship Co., will be changed to PROGRESS.

The steamers PENOBSCOT and J. J. H. BROWN put into drydock at Buffalo recently for repairs to bottom damage.

Marvin M. Marcus, vice president of the Great Lakes Transit Corp., Buffalo, in charge of finance, died on Jan. 10 after an illness of six months. He was one of the organizers of the Transit corporation.

The Buffalo chapter of the International Shipmasters' association held its annual meeting on Jan. 8. The following officers were elected for the coming year: Capt. John E. Drury, president; Capt. Frank Ernst, first vice president; Capt. Alex McPherson, second vice president; Capt. Joseph M. Green, secretary; Capt. Frank R. Gebhard, treasurer.

The steamer D. M. CLEMON, which grounded at Hyde Park reef recently, has been put into drydock at South Chicago for repairs.

The Great Lakes Transit Co. of Canada, has filed federal court suit against the Hand & Johnson Tug line, Buffalo, to recover \$29,291 for

alleged damages to the claimant's steamer GLENSHEE said to have been carelessly towed on a rock by a tug operated by the defendant company.

The 98 vessels of the Pittsburgh Steamship Co., Cleveland, with the exception of the barge MARCIA which

is at Detour, are laid up at ten different ports on Lake Erie and Lake Michigan.

The Soo locks closed for the season on Dec. 27 with the passage of the steamer A. E. R. SCHNEIDER. The locks had kept open the latest in

their history to permit this boat to get off Lake Superior.

The steamer W. D. CRAWFORD which grounded at North Point, Lake Superior, recently was put in drydock at South Chicago. She had about 60 damaged plates.

Activities Along the Pacific Coast

EFFECTS of a decision just rendered by the interstate commerce commission, giving Portland, Oreg., a rail differential of two cents per hundred will be closely followed by grain exporters, ship operators and others. The case has been pending more than two years. Portland based its claim for a lower rate on the assertion the water level haul to that terminal as against the over-the-mountain haul to Puget sound entitled the Oregon port to preference. The present decision applies only to certain territory in Oregon and Washington south of the Snake river, where huge quantities of wheat are grown. It is believed the lower rate will divert considerable export grain and flour to Portland. However, the port of Astoria, which joined in the case with Portland, is left on a parity with Puget sound ports. Although Astoria has a water level haul, it is 100 miles farther from the interior. It is likely Puget sound terminals will endeavor to have the case reopened. Some traffic experts assert that if the same principle is applied by the interstate commerce commission it would give Puget sound ports the entire grain territory north of the Snake river and thus take from Portland more than that port has gained by the decision.

The Shipmasters' association of the United States, which was organized in Seattle six years ago, has been merged into the Neptune association, incorporated under the laws of the state of Washington, with Capt. Fred J. McGuinness as manager of the Seattle branch. The Seattle association has members in all parts of the world.

Shipping interests of Portland, Oreg., and Vancouver, Wash., are making efforts to have the government dredge a 30-foot channel from the mouth of the Willamette river to Vancouver, where large vessels are under construction.

The former auxiliary schooner LAUREL WHALEN, which was towed from Pago Pago to Vancouver, B. C., in a disabled condition has been purchased by the British Columbia Cement Co. and will be converted into a barge.

Despite a decrease in Oriental commerce the port of Seattle, for the first 11 months of 1920, shows revenues of \$1,296,972 and expenses of

\$1,183,455; leaving a net profit of \$113,517. The port's new Smith cove Pier B, said to be the largest ocean terminal in the world, will be in full operation early in 1921, when it will become the terminus of the Oriental passenger fleets of the Pacific Steamship Co., and the Nippon Yusen Kaisha.

Direct service between North European ports and the Pacific coast will be established early in 1921 by the Pacific Steamship Co., which plans to use the steamships WAWALONA and ENDICOTT and possibly others. Antwerp will be the European terminus.

The little freighter MORNING STAR, which since 1908 has been operating between Seattle and Vancouver, B. C., recently completed her one-thousandth voyage on this route. In that time she has steamed 300,000 miles and handled 200,000 tons of cargo. The MORNING STAR was built in Essex, Mass., in 1900 and for several years was used as a missionary vessel in the South Pacific islands, coming to the Pacific via the Straits of Magellan in 1904.

After lying submerged in British Columbia waters for several months the Grand Trunk Pacific's express liner PRINCE RUPERT has been raised and towed to Prince Rupert, B. C., for repairs.

Vancouver, B. C., is making a determined effort to participate in the movement of grain from prairie points in Canada by asking for rail rates equal to those now enjoyed by Fort Williams, Ont. Vancouver has built new modern terminals and enjoys excellent water service to all parts of the world. It is asserted that much of the Canadian surplus now moving to Atlantic ports should be exported through Vancouver. Discrimination is charged in rail rates, as from Calgary to Fort Williams, 1240 miles, the export rate is 30 cents per hundredweight, while from Calgary to Vancouver, 641 miles, the export rate is 35 cents per hundredweight. Equalization of these rates, it is claimed, would divert a large amount of grain through the British Columbia gateway.

The British steamer ORCA, the largest vessel ever to enter the Columbia river, has completed loading a cargo of wheat at Portland. This vessel en-

joys the distinction of being the largest vessel to pass through the Panama canal. She was handled in the Columbia river without difficulty, to the great satisfaction of Portland shipping men who have maintained that any vessel can negotiate the Columbia.

In appreciation of the heroic efforts of the Indians living along the Washington shore on the Pacific in saving shipwrecked sailors, Puget sound shipping men sent handsome presents to the villages near where the barge W. J. PIRRIE was lost late in November. The PIRRIE was in tow and in a terrific storm it was necessary to cut her adrift. Twenty-one lives were lost. The Indians saved two men from the vessel and otherwise rendered splendid service.

The famous old steamer DORA, built in San Francisco in 1880, lies submerged in 40 feet of water off Vancouver island after striking a submerged reef. The DORA is a historic figure in Pacific coast shipping circles. This vessel for years plied from Seaward to Aleutian island ports in all kinds of severe weather establishing a record that is known over the seven seas. Her most noteworthy feat was performed in 1905, when she disappeared for 45 days and finally returned to Puget sound under sail. She had been blown from Alaska almost to the Hawaiian islands and, with engines disabled, was brought back under jury rig.

Two men were killed and several injured by the explosion of a shipment of coal in the hold of the steamer VICTORIA loading at Seattle. The vessel was not damaged owing to the fact the hatches were open at the time.

Information from Japan states the Nippon Yusen Kaisha has declared a dividend of 30 per cent as compared with a 100 per cent dividend in 1919.

Forty prominent Chinese from all parts of the United States at a recent conference in Seattle considered plans for establishing a steamship line between Seattle and China. In connection with the water service an import and export company has been organized.

Under new arrangements the Nippon Yusen Kaisha will hereafter send its freighters to Vancouver, B. C., from which port all cargo has heretofore

been transhipped to Seattle en route to the Orient. B. W. Greer & Sons have been appointed Vancouver agents. The passenger liners will call only at Victoria, B. C. and Seattle as at present.

With logging camps closed and saw-mills idle, little lumber is being ex-

ported from Puget sound and the Columbia river at this time. The foreign market is in a depressed state and in consequence there has been general cessation of production. This affects the tug boat companies and a larger fleet than usual now is idle.

Extensive repairs have been made by

Todd Dry Docks, Inc. to the disabled lumber schooner SAMAR, which was forced to return from sea after springing a dangerous leak. While being discharged, the schooner's pumps were kept constantly at work, removing 120,000 gallons of water per day. More than 1,000,000 gallons were pumped to keep the schooner afloat.

Activities Along the Gulf Coast

THE iron steamship TRUXILLO, christened BRUNSWICK, when she was built in Scotland in 1876, was sold at auction at New Orleans, Dec. 27, for the sum of \$30,100 to David B. Penn, for the Gulf and Southern Steamship Co., of which he is president. The United Fruit Co. sold the steamer which, in 1918, was sold at private sale for \$300,000, also at New Orleans. This is the second time Mr. Penn has owned TRUXILLO, having bought her first, when she was BRUNSWICK, from the New York and Cuba Mail Steamship Co., in 1912. She will remain in the service of the Gulf and Southern Steamship Co., operating between New Orleans and Tampa, Fla.

The Kerr Steamship Co. of New York, will establish an office in Port Arthur, Tex. early in the new year, according to announcement from the company's headquarters, and will operate British ships for cotton to British buyers and spinners, who prefer to use British bottoms to those of the United States shipping board.

Eight survivors of the schooner JOHN PIERCE, of Boston, which foundered in the Gulf of Mexico on the night of December 26, were brought to New Orleans by the steamship TEGUCIGALPA, of the Vaccaro Brothers' Fruit Steamship Co., December 28. Among them were Captain Q. M. Carson and his wife. No one was lost from the JOHN PIERCE, which was bound from Laguna, Mexico to Boston.

New Orleans broke all her own records for arrivals of shipping, on Dec. 27, when 24 incoming vessels filed manifests and 26 were reported as entering the mouth of the river. The best previous day was August 17, 1920, when 22 filed inbound manifests.

The Pan-American Steamship Co., of San Francisco, announces establishment of regular steamship service between New Orleans and Hong Kong, by way of Havana and the Panama canal. The first vessel to arrive in the new service was the 3500-ton steamer WALLOWRA, early in January. The American Finance and Commerce Co. is general agent for the line, and J. Bloomer is its New Orleans agent, with offices at 332 Magazine street.

The Standard Oil Co., of New Jersey, sent down the river late in Jan-

uary the largest steel barge that ever navigated the Mississippi. It was built in Pittsburgh and carried down to New Orleans 3000 tons of large pipe, being shipped to the oil fields of Mexico and Peru, according to a statement issued at New Orleans by Robert F. Meyer, of New York, chief of the traffic department of the Standard Oil Co., of New Jersey, on a recent visit to New Orleans. The barge was towed down the Ohio, thence down the Mississippi to New Orleans, and docked there while the pipe was re-shipped, consigned to the Transcontinental Petroleum Co. for use in the southern republics.

The Johnson Iron Works, Drydock & Shipbuilding Co., Inc., of Algiers, just across the Mississippi river from New Orleans, has obtained the contract to construct towboats and barges for the Gulf Oil Refining Co. to a value of \$75,000. The equipment to be furnished includes two steel barges, one steel hull and one towboat. This is the company which successfully carried out a contract for ten 100-ton steel seagoing tugs for the government during the war.

The federal grand jury has taken up the dumping of oil from ships into the Mississippi river at New Orleans, and has returned several indictments against steamship captains. The recent fire, which did heavy damage to the Jahncke drydock and ship repair plant there, is held to have been caused by sparks falling in oil floating on the river.

The New Orleans dock board is preparing to purchase another fire tug, at a cost not to exceed \$200,000.

Damages tentatively placed at \$400,000 from a fire on the docks at Galveston, Tex., Dec. 23, when an explosion on board the oil barge BOLIKOW spread to the Southern Pacific railroad's docks. Two men were killed and two injured, the oil barge was destroyed, and the steamers EL OCCIDENTE, HASTNAI and ASCHENBORG were damaged. Part of the docks and a grain conveyor were burned. Captain Wallace Mackenzie, of the British steamer ASCHENBORG, saved his vessel from destruction, by crouching on the bridge, steering with the lower part of the wheel, handling his engine-room controls with his feet, and backing her out of her berth, through a wall of flame, into the channel. Slight

burns to the superstructure, which caught fire three times during the passage, was the only damage to this steamer.

An indication of the revival of packet traffic on the Mississippi river, which has brought more than forty steamboats back to this stream and its tributaries during the past year, was given late in December, by the sale of the 150-ton packet, C. A. CULBERTSON, and the 100-ton packet, THOMAS B. FLORENCE, by Captain George Prince and O. K. Wilds, of Vicksburg. CULBERTSON went to the Wood Construction Co., of Lincoln, Neb., and FLORENCE to Reed and Lanier, of Natchez, Miss.

Value of cargoes carried by the Mississippi river barge line operated by the waterways department of the federal government, for the year ending Nov. 30, 1920, was more than \$51,000,000, according to figures just compiled by the headquarters of the government barge service in New Orleans. This total includes raw materials and finished products, and shipments were both up and down stream. The report makes the following interesting comment: "The population of the United States increased 39 per cent between 1900 and 1920, while, in the same period, the railroads increased their freight-car equipment 77 per cent, their locomotives 71 per cent, and their single-track road, 34 per cent. But the revenue tons on the railroads in the same period increased 167 per cent. Hence the freight congestion, which the barge and steamboat lines come to relieve, and they serve 37 per cent of the population of the United States."

The West Indies Transportation Company began construction, late in December of its dock and warehouse at Marrero, La., on the west bank of the Mississippi, just across the river from New Orleans. These improvements include a wharf for the unloading of Cuban molasses, and a 70,000-barrel molasses storage tank. Construction is to be completed by the end of January, with an expenditure of approximately \$100,000.

The Louisville & Cincinnati Packet Co., which is operating the river steamer QUEEN CITY between the Ohio port and New Orleans, has named Henry C. Dreyfus, general agent at New Orleans.

Practical Ideas for the Engineer

Electric Ship Auxiliaries—Improvements in Coast Piloting Methods—
Description of New American 2-Cycle Engine—Floating Repair Shops

ON land, the electric motor is used for every possible purpose; but on sea, the steam engine still is the standard drive for winch, capstan, windlass, steering gear, pump, fan, and refrigerating machine.

Summarized by electrical engineers, this adherence to what they term an obsolete form of drive is due almost entirely to the conservatism of marine men. This conservatism is entirely natural and proper, for no rule has a higher justification than the universally accepted dictum that "no machine must be placed on a ship until its utility and its reliability have been proved beyond question."

But these engineers state that the veteran donkey engine must yield to the electric motor; for the greater utility of the electric motor as compared to the steam engine, is proved by hundreds of thousands of land installations, while its reliability on shipboard is shown by its record of many years of service on naval vessels, motor ships, and other types of vessels. One engineer sends this summary:

Consider for a moment the thousands of feet of steam and exhaust piping that run through a ship with steam-driven auxiliaries. These pipes are awkward, expensive to install and

very much in the way. They are apt to leak, break, sometimes to freeze in cold weather, and often cause undesirably high temperatures in holds and living quarters. Furthermore, because of the waste of steam in the pipes due to condensation and leakage and the poor economy of the small engine, the entire system is inefficient.

When motor-drive is used, these disadvantages are eliminated. The cables to carry the current can be easily laid, occupy no valuable space and, when properly installed, cannot be damaged in ordinary service. The motors are quite as reliable as the engines, are automatically protected against overloads, can be made absolutely waterproof and, if an accident should occur, parts are light, easily accessible, and can be readily repaired on board ship. Nor does the use of motors involve any special change in the ship's organization. It is already equipped with an electric system, which merely needs enlarging, and almost always carries a competent electrician.

Consequently, motors will in most cases prove more economical than steam engines, but there is a still more important reason for their use—one that must especially interest

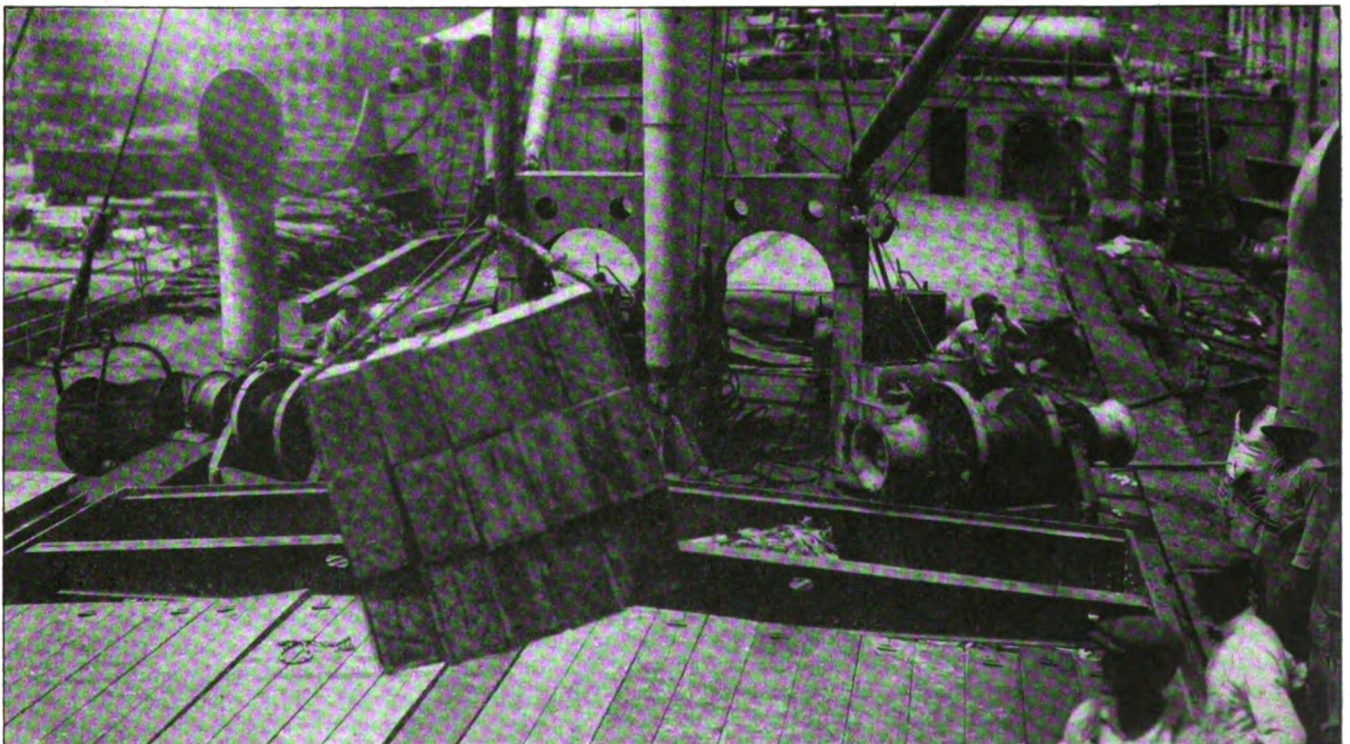
the progressive American shipping man—and that is, that the introduction of electricity for power purposes on shipboard will unquestionably in time greatly increase the all-around operating efficiency of the ship.

Olympic To Burn Oil Fuel

Particulars of the work to be done on the OLYMPIC to increase her oil bunkering capacity have just been given out by the International Mercantile Marine Co. The ship will be laid off following her arrival at Southampton and will be sent to Harland & Wolff's yard at Belfast.

Alteration work done will include the installing of oil storage tanks in hold Number 1, of 910 tons capacity and in hold Number 3, of 1577 tons, which will bring the ship's total bunkering capacity up to 7555 tons, or more than enough fuel for a round trip. The ship's present tank capacity is 5068 tons. She burns a minimum of 3600 tons or 23,760 barrels of oil on a single voyage.

It is stated oil burning has proven a complete success on the OLYMPIC, and that the efficiency of oil is far above that of coal fuel in every respect. About one mile an hour better speed



ELECTRIC WINCHES HANDLING CARGO ON A MODERN FREIGHTER

is obtained with oil than with coal, of more than 26 land miles, an hour the ship having maintained a record on her best eastward run, which be- speed of 22.53 knots, or the equivalent gan at New York, Nov. 6.

Practical Aids for Pilots

Navigating in Difficult Waters
Made More Safe by 3-Bearing Fix

BY COLIN MCKAY

NAVIGATION, at once an art and a science, made some advances during the war. The navigator approaching or skirting coasts in the war zone was confronted with unusual conditions. In some respects his voyages were as much an adventure as those of the old discoverers; but the leisurely methods of the early navigators feeling their way along unknown coasts were not for him—speed was the essence of his contract.

He could not put too much dependence on the aids to navigation, which were his guiding posts in times of peace. Lights might be extinguished, their character or range changed in order to deceive U-boats, buoys might have been moved to a new position or removed altogether. Numerous ships sunk in shoal water rimmed the coast, ready to rip the bottom out of his ship. Often their positions were known, but seldom were they marked by buoys giving warning at night. Here and there were mine fields. Admiralty instructions never clearly indicated their position or extent; they simply ordered the navigator to lay his course between certain defined positions.

In these circumstances the navigator naturally developed a new interest in the various methods of fixing his position and laying a course that would carry him to the desired position in spite of the effects of winds and the vagaries of the currents. Keen minds sought for improved methods in the art of coastwise navigation, the great consideration being simplicity and readiness of application.

Intricate Calculations Valueless

More than ever the navigator had to keep a steadfast watch upon the seas for signs of dangers, lurking U-boats or uncharted wrecks, and he had no time for working out intricate calculations. The time-honored method of running in on a prominent headland and fixing his position by four-point bearings was not good practice in war time. Admiralty instructions warned him to avoid prominent headlands because U-boats usually chose the vicinity of prominent head-

lands for their hunting grounds—at any rate in the early days of the war.

And when the navigator was able to determine his position by four-point bearings, he wanted to be fairly certain of his fix, which by the ordinary methods always depends upon proper allowance for leeway and the effect of tides. If he was zigzagging between bearings he had to figure upon a new factor in the problem. Interest naturally was developed in the use of instrumental position finders and some inventions and improvements were the result. One of these new position finders which has attracted considerable attention is that developed by Capt. R. E. Cary, of the British merchant service. He calls it the "Four Point Corrector and Position Finder." It is easy to operate and, without the use of tables, corrects errors arising from leeway or currents. Manipulated on a chart it shows the distance a ship will pass off an object when abeam, given two previous bearings and the distance run between them. It shows also the distance to run before she is abeam of the object.

Another important contribution to coastwise navigation has been made by Capt. H. H. Edmonds, an Australian navigator. Capt. Edmonds has been hailed as the introducer of an entirely new principle in navigation, and as a benefactor of seamen worthy to rank with Pedro Nunez, the Portuguese, Cornelius Douwes the Dutchman, Sumner and Marcq St. Hilaire. This enthusiasm may be pardonable, but it is hardly warranted. The principle of Capt. Edmonds' method is scarcely new to mathematicians, though its application is no doubt new to navigators, at any rate those of the merchant service. The original contribution of Capt. Edmonds' is the working out of tables, which enable the navigator by interpolation and a simple calculation to find out the "real" course of his ship from three bearings of one object. The method of determining the approximate position of a ship by two bearings of the same object and the course and distance run between the bearings, is well known. Bowditch, Norie, and most works on navigation contain tables,

which enable this problem to be solved after a fashion—that is, on the assumption the ship really makes good her compass course and the distance shown by the log. The course and distance often are affected by leeway and currents, and in practice the navigator makes allowances for these factors—a piece of guesswork in any case. A navigator with long experience in given tidal waters, knowing also the behavior of his ship under various conditions of wind and weather, will arrive at pretty accurate fixes; nevertheless, within certain limits he depends on empirical judgment.

A Three-Bearing Fix

Capt. Edmonds' method consists of taking three bearings of a single object and the intervals of time between the bearings (which represent the distance run between the bearings) and making out the trigonometrical relations of these elements. Thus he arrives at his tables, which enable the navigator to deduce his true course over the ground (not through the water) assuming that the ship continues at the same rate of speed and that the action of the currents and the winds remains constant during the interval between the first and third bearings—not unreasonable assumptions, provided the interval between the bearings is not long enough to admit any great change in the tides or winds.

Sections of Capt. Edmonds' tables are as follows:

Quotient First Time by Second	Common Interval of Bearing		
	23	28	34
1.48	42.5	42.1	40.1
1.44	44.2	43.4	41.2
1.33	48.4	47.0	44.3
1.30	49.4	47.9	44.8
1.29	50.6	48.8	45.5
1.25	52.3	50.2	46.7
1.24	53.1	50.8	47.1

What is called the quotient is the ratio of the intervals of time between the bearings. Application of table, however, may best be illustrated by an example:

Suppose the ship is at A with a lighthouse or light bearing due north and distant 12 miles, the distance having been determined by a sextant angle of the elevation of the lighthouse, or other method, such as finding the latitude by observation of a heavenly body. The ship proceeds in a north-easterly direction and after 21 minutes the lighthouse bears N28W. She continues on the same course, and at same rate of speed till the lighthouse bears N56W, the second run taking 16 minutes. Divide the intervals of time, 21 by 16, and the quotient is 1.3. With the quotient 1.3 and the common interval of bearing, 28 degrees, enter the table and we get the factor, which

determines the course, 47.9 or nearly 48 degrees.

Captain Edmonds gives the following rule for the use of his tables:

"The lesser time angle is divided into the greater and the tables entered with this quotient or ratio under the number of degrees selected for the bearing angle. In the corresponding column is given the course angle, which applied forward of the first bearing of the object (when the first time interval is the greater) or abaft the last bearing (when the first time interval is the lesser) gives the course made good."

Course Can Be Plotted

In this case the course angle of 48 degrees applied forward of the first bearing of the object, which was due north, gives N48E as the course made good. This course plotted on the chart along with the bearings, will permit the distance from A to C and from L to C to be pricked off, or they may be worked out from the tables ordinarily used for determining a position by two bearings of a single object. In this example it would be found that the ship had made 10.2 miles over the ground, and that at the time the third bearing was taken she was 9.2 miles off the lighthouse. If she had steered N38W by compass, and made 8 miles by her log, the set of the current would be N84W, and the drift during the ship's passage from A to C would be 3 miles.

Captain Edmonds' tables are worked out on theory that a ship makes a straight course and maintains an even speed. These conditions may not always be met, but the departures from them will be rarely sufficient to invalidate the deductions from his tables to any extent. No doubt the tables of the Australian mariner will soon come into general use, for the importance of a simple method of determining the course made good is obvious.

May Know True Course

When a navigator passes a headland, light-ship or buoy and lays a new course often he is anxious to know just what course he is really making over the ground. With a suitable mark in sight Captain Edmonds' tables offer him a ready method of finding out. Having the course made good, other methods of fixing the ship's position can be applied with greater accuracy.

In air navigation Captain Edmonds' method will probably prove of very considerable value. When flying over the sea or a land unfamiliar or lost in mist, the air navigator can determine the course he is making if he is able to secure bearings of a distant peak, jutting above the mist of fog.

Design 2-Cycle Engine

American Engineers Evolve Improved Heavy Oil Power Plant for Large Freighters

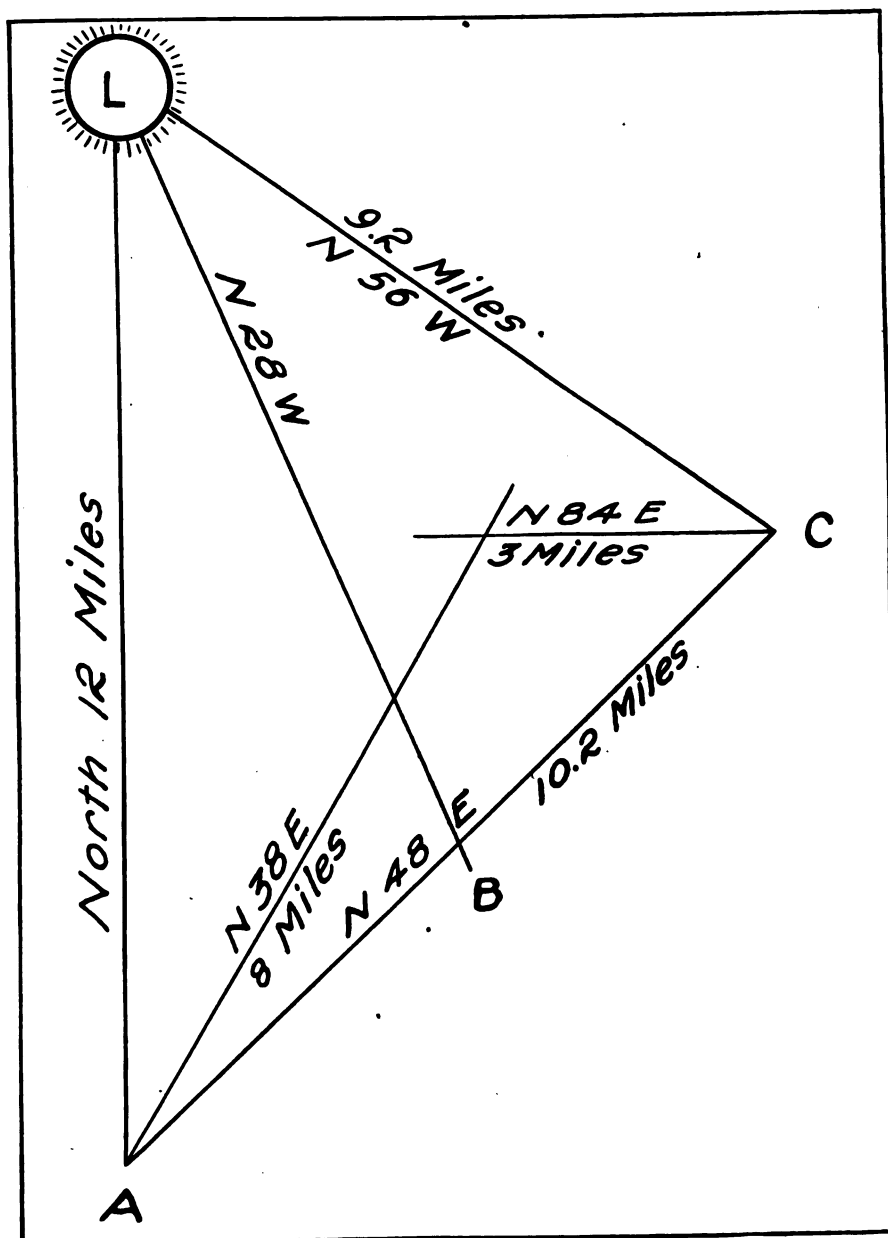
ANNOUNCEMENT of the successful test of Bethlehem Steel Corp.'s fuel saver, the 2-cycle diesel engine, has brought out among builders and operators of ships both here and abroad, a flood of inquiries for details as to this latest development in oil-fuel machinery.

Driven by the new engine, the CUBORE has completed several voyages to Cuba, from which she has brought back cargoes of ore to the Bethlehem Steel Corp. from its island properties. No attempt at secrecy was made, but the CUBORE's departure on her maiden voyage was known to few persons outside the circle of those who figured in the designing and build-

ing of the vessel's machinery. The company's announcement that followed the completion of the test was therefore a surprise. Its two distinctive features are summarized as follows:

(1) An internal-combustion, heavy-oil engine has been perfected, which not only is built by Americans, but is built especially for Americans and is adapted to American operating conditions, on land as well as at sea.

(2) A 2-cycle, internal-combustion, heavy-oil engine has been perfected, which produces the same horsepower as a 4-cycle engine twice its size, and is adapted alike to heavy, large cargo



METHOD OF APPLYING CAPTAIN EDMONDS' TABLES FOR FIGURING THREE-BEARING FIXES IN COASTWISE SAILING

ships and power plants with a saving of two-thirds in fuel costs.

The combination of these two elements is calculated to be of inestimable value in the maintenance and development of the American merchant marine. From the practical standpoint of the man owning or operating ships, it is the economy of the engine, especially under the conditions affecting the present and future fuel supply, that makes it interesting.

For years Europeans have operated large ships with internal-combustion, heavy-oil engines of the 4-cycle type. Engineers have long known that the principle of the 2-cycle engine was sound; but it remained for the Bethlehem designer to adapt that principle to American operation and to perfect his adaptation for practical use in vessels of any size.

Designed Under Pressure

The man who solved the problem was Arthur West, head of the power plant of the Bethlehem Steel Corp., and among the foremost gas engineers in the United States. The mechanical difficulties in West's work were complicated by circumstances attending the pressure of war production. When the war ended, however, preliminary steps had progressed to a stage at which the designer and his little coterie of engineer assistants knew exactly what was needed for the completion of their work. So, it was not long before the engine was finished. It was set up on land for tests, while a ship was being built to take it aboard. The engine was assembled at Bethlehem and harnessed to the power generating system.

The new engine not only ran that day and the next; for 10 months it did its bit on land alongside the gas engine that supplies the plants of Bethlehem with power—incidentally another of West's creations. By that time the *CUBORE* was ready. The engine was dismantled and shipped to the Fore River plant of the Bethlehem Shipbuilding Corp., Ltd., at Quincy, Mass., where the new ore-carrier had just left the ways.

Regarding the engine and its performance, Mr. West says:

"Europeans failed in designing of diesel engines for American operation, because their creations were not suited to American operating conditions, especially conditions prevailing in American engine rooms where the crew was not used to a multitude of fine adjustments and delicate mechanisms. We had the same experience in making large gas power engines for land use. We had to design them especially for American use and our experience with internal combustion land engines served us well in this case.

"The two factors, which made this

engine possible, were a combination of the Bethlehem experience in the designing and building of internal combustion land engines and the marine experience of the Bethlehem shipyards. Success would scarcely have been possible without the co-operation of these two. Our marine engineers and our marine experience were available close at hand and extremely valuable in the working out of the practical problems involved.

"The secret of the success of any device, so far as its operation by Americans is concerned, is that it be made with the fewest possible adjustments. The designer of an engine ought to be able to say what is the proper adjustment. Not only that, but he ought to remove the possibility of an engineer's adjusting it any other way if he can do so. That's where our European friends failed when it came to making engines for American operation.

"In the matter of economy it is interesting to see how operation of this engine works out in actual dollars and cents. A vessel like the *CUBORE*, equipped with a 2-cycle engine, let us say, uses 3000 gallons of heavy fuel oil daily or about 60,000 gallons on a round voyage of 20 days. An oil-fired steam engine on a similar vessel would require three times as much or 180,000 gallons.

"This makes a saving of 120,000 gallons of oil on one voyage. On an average of 12 voyages a year, it is estimated that at the present price of fuel oil, a ship with a 2-cycle engine would save for its owners approximately \$130,000 annually. This takes into consideration the saving on oil alone, disregarding saving on cargo space and crew, and of course, the higher the price of oil, the greater the saving.

"Furthermore, the Bethlehem 2-cycle engine will use just as effectively the heavy fuel oil that is used in the oil burners on an oil-fired steamship. No greater refinement is necessary, and therefore the price of the oil used in the engine is no greater than the price of the oil used on an oil-burning steamship."

U. S. Owners Plan Ships

(Concluded from Page 60)

Venezuela offers many opportunities for trading and future developments there industrially will undoubtedly encourage an expansion of these services. Colombia, on the other hand, affords one of the greatest opportunities for development. Colombia has great potential wealth that is yet to be developed. The extension of American interests there has been checked only by the troublesome question of the Colombian treaty.

On the Pacific coast, the Pacific

Steamship Co. has planned the construction of two palatial coastwise passenger steamers to operate between Seattle and Los Angeles. The Pacific Mail Steamship Co. is one of the operators which will manage the new passenger boats of the shipping board running to the Orient. Shipping developments on the Pacific depend much upon the competition that is offered by the Japanese. It promises to be a much more difficult problem than the competition offered by foreigners in the Atlantic trades.

But there are coming to light constantly plans for improving the connection between the United States and both the east and west coasts of South America. The Ore Steamship Co., a subsidiary of the Bethlehem Steel Corp., has already had constructed a number of oceangoing ore boats to bring iron ore from Cuba to Baltimore. This company has recently let contracts for two combination oil and ore bulk carriers to operate through the Panama canal down to Chile. They are to be so constructed that they can carry oil down and bring ore back. It is understood that, by arrangement with the Standard Oil Co., two additional carriers of this class will be built for this service. The new boats are to measure 22,000 tons deadweight and will be diesel-engined. Work on the construction of the first two vessels begins immediately.

Need Settled U. S. Policy

If the steamship companies were given the proper encouragement to proceed with their plans, there would be no real lack of shipbuilding opportunities for American yards. Naturally, it has been difficult to obtain credits from banks and the sale of securities is by no means an easy matter while tight money continues. But to overcome these difficulties, it is not necessary to resort to direct government assistance.

To offset the difficulties encountered by private operators in obtaining money with which to make extensions to their properties, the Jones act provided for the granting of government loans to steamship companies. These loans may be made at any time within the next 10 years. To date not a single application has been made to the shipping board for such financial assistance. The new law also provided that a steamship company would be excused from the payment of the excess profits tax if the money is invested in building a new ship in an American yard. Many steamship companies had already committed themselves to shipbuilding contracts and naturally the tax-exemption clause was made to apply to all of those. Since then, however, the tax

exemption provision of the law has been of no avail in encouraging ship-building.

The facts of the situation appear to be these:

1—Competition offered on the part of government-owned tonnage allocated upon an unbusiness-like policy is a definite check to the private ownership of the merchant marine.

2—Congress may provide protection to American ships, but it is impotent when the administration will not apply that law. This is the actual case in connection with the repeal of certain portions of the commercial treaties which President Wilson refused to carry out.

3—A subvention is not a subvention when no assistance under it can be obtained by the steamship owner. Congress provided for preferential mail contracts being made with American-flag ships. Yet Postmaster General Bursleson refuses to pay an American ship any more for carrying the mails than is charged by a foreign ship. Under the mail contracts held by the American line, the contract fees collected for carrying the mail were actually less than the pound rate the postoffice paid the British lines on the same run.

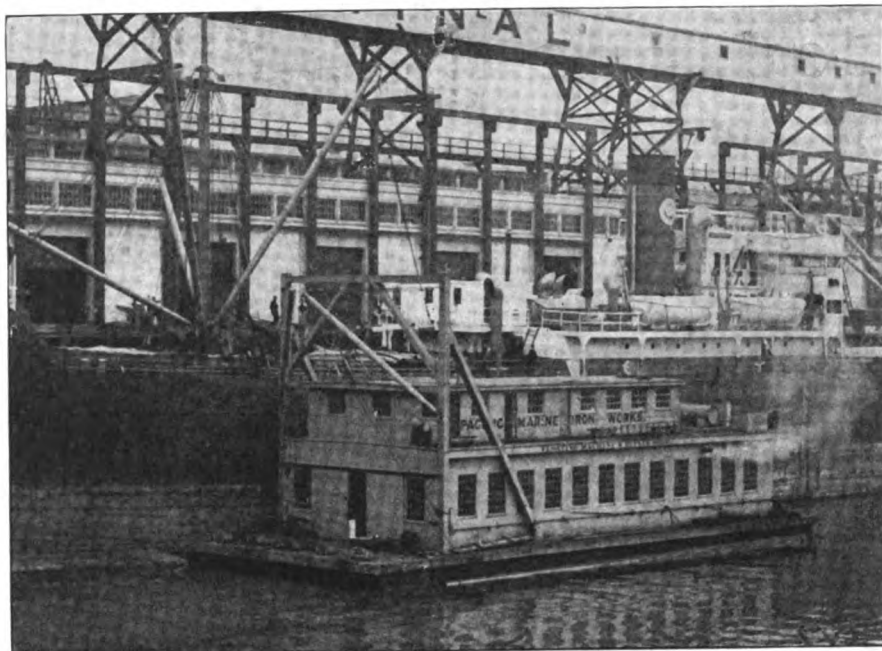
The decision of the country relative to a continuation of the administration which permitted such short-sighted policies makes steamship interests hopeful that a complete change will be effected in the shipping board after next March.

Approve Cable Routes

Announcement made in December before the senate committee by President Newcomb Carlton, of the Western Union Telegraph & Cable Co. that his idea of extensions of the Pacific cable system is for two cables from Seattle, one via the Aleutian islands direct to Japan, and the other to China, brings official approval to a route long advocated by the Pacific Northwest section and encouraged in the Orient.

Senator Wesley L. Jones, of Washington, has advised the Seattle chamber of commerce he will endeavor to secure early legislation for laying of at least one additional cable across the Pacific. He said that if private companies did not show a disposition to do the work, he would recommend government construction and operation. He estimated that the cable would cost approximately \$6000 a mile.

In its official statement as a result of investigations made with the co-operation of army engineers, presented to officials at Washington, the Seattle chamber points out the advantages of the route now favored by President Carlton. A cable touching on the



FLOATING SHIP REPAIR PLANT

Aleutian islands would follow the great circle of navigation now used by ships coming from the Orient to Seattle, the shortest route across the Pacific. The present cable from San Francisco to Yokohama is 6993 nautical miles long, while a cable laid from Seattle by the route suggested by President Carlton would be 4254 nautical miles.

The present cable from San Francisco to Manila is 7141 nautical miles long, while a cable from Seattle to Manila via Yokohama would be 6011 nautical miles. A relay station on one of the Aleutian islands, half way between Seattle and Japan, will make the first two spans about 2127 knots each. Comparing distances, the Aleutian island route will be 1130 knots shorter to Manila, 2739 knots shorter to Yokohama, with similar results to other points in the Far East. The longest span of the present cable is about 300 knots longer than either of the two equal spans to Yokohama by the Aleutian route. To Manila three relays are used on the present cable to two required by the Aleutian route; to Yokohama the present cable has three relays to one by the latter route.

Order Bunkering Plants

The Wellman-Seaver-Morgan Co. reports receipt of an order from the Western Maryland Railway Co. for an improved boat loading plant for cargo and bunkering all sizes of vessels from bay schooners and tugs to 20,000 ton ships.

This equipment will be installed at Port Covington, Baltimore, at an expense of more than \$250,000, exclusive of the supporting pier and furnishes

another evidence that the railroads are doing everything possible to increase their efficiency

Floating Repair Shops

"Taking the shop to the ship" is the latest activity in coast shipping centers. At least two such boats, one on each coast, already are being operated. The Pacific Iron Works has its floating repair shop stationed at Portland to serve that district. The Globe Ship Repair & Supply Co., 17 Battery place, has its floating plant berthed in New York harbor, where it is accessible to all docks in that section.

The Pacific Marine Iron Works operates its plant as an adjunct to its engine and boiler building plant at Portland. The float carries a complete layout composed of machine and blacksmith shops, electric and oxyacetylene welding and cutting equipment, air compressors for drills, riveters, chippers, etc. It carries also a crew of wood shipwrights, riggers, painters, caulkers, etc.

The Globe company's boat, known as the HARVESTER, is a self-propelled gasoline lighter, carrying most everything found in a ship repair yard ashore. Boilers and pumps for air compressors, electric generators for welding and repair machinery, as well as lighting when working on ships whose boilers are dead, are but a few of the appliances this boat carries. Its machine shops is well suited for ship repair work, the equipment ranging from small drills up to a lathe, which will take work 15 feet in length. The company is headed by Capt. C. A. Massey, former Great Lakes shipbuilder.

Equipment Used Afloat, Ashore

Vertical Boring Mill—Sheet Cutter—Counter and Telltale

CONFIDENT vertical construction afforded great possibilities for accuracy and simplicity not otherwise attainable, the Storm Mfg. Co., Minneapolis, has evolved a vertical power boring mill. This mill is intended for automotive cylinder reboring; but its vertical design makes it ideally suitable for boring and reboring large gears, tractor wheel hubs, heavy bushings and rough

to size. The accuracy of the Storm mill is in great measure due to the rigid construction of the body casting and the strength of this boring-bar.

Two boring-bar feeds are obtainable, 40 revolutions per inch for general work and eight revolutions per inch for fast work. By means of step cone pulleys the boring speed may be suited to the feed and character of the work. The boring-bar is actuated by a heavy feed-screw and cut gears and has a travel of 20 inches.

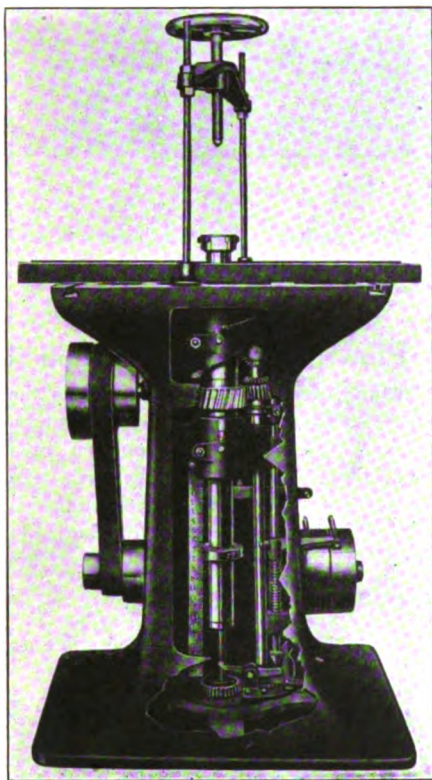
An automatic time-saving feature makes it possible to set the bar to stop and return to bottom at completion of the cut.

Four self-centering Storm multiple-cutter adjustable type cutter heads, with high speed steel cutters are provided, affording a diametrical boring

range of from $2\frac{5}{8}$ inches to $7\frac{7}{8}$ inches. Special heads to 12 inches diameter can be had. Simplicity of operation, accuracy and adaptability are features. The shipping weight is 1200 pounds.

Rotary Sheet Cutter

The Bethlehem Shipbuilding Corp. has developed a new rotary shear machine after a design by one of its employes at the Fore River plant, Quincy, Mass. The new machine, as illustrated, is particularly adapted to irregular cutting of all kinds on sheets and light plates. The inventor is Guy Walz, an old employe at the plant. A feature of the new machine is its automatic operation. The work is said to be handled much as cloth might be in a sewing machine.

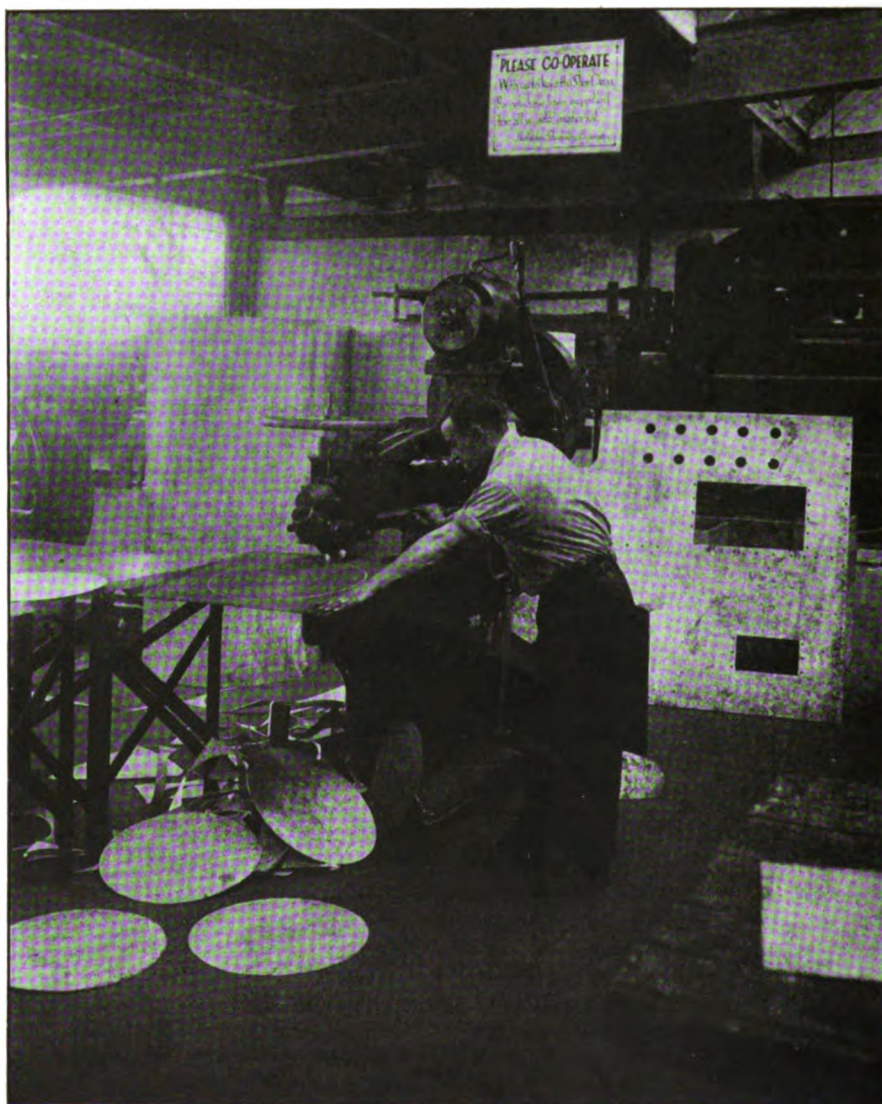


VERTICAL BORING MILL

castings even of unusual dimensions.

The pedestal body occupies a floor space 30 x 36 inches, and stands 44 inches high. Its upper face is accurately surfaced and, equipped with parallel sliding rails and an adjustable overhead clamp, forms a horizontal bed on which cylinder blocks and heavier work may be readily mounted and handled. The pedestal body also houses the boring-bar, with its driving, feed and regulating mechanisms, and insures adequate protection to these moving parts.

The upper and lower adjustable main bearings supporting the centered boring-bar are extremely liberal (8 and 6 inches long respectively) and are an integral part of the one-piece body casting. The carbon steel hollow boring-bar is bone-hardened and ground

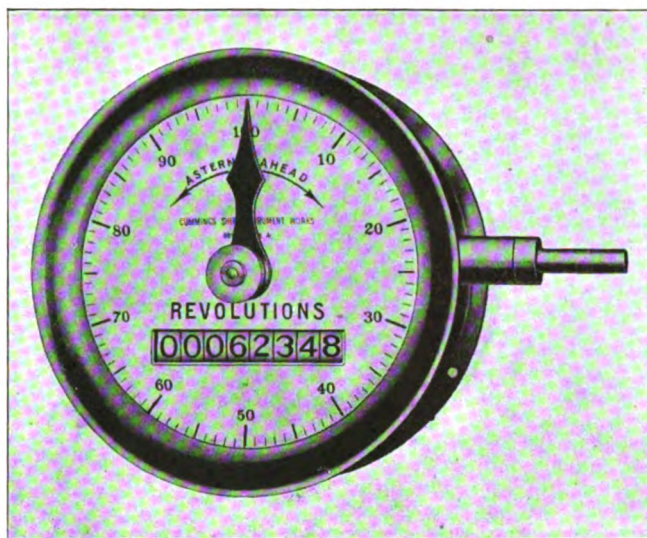


CUTTING SHEET IRON DISKS BY IMPROVED METHOD

Counter and Telltale

Combination revolution counter and telltale recently has been developed by the Cummings Ship Instrument Works, Boston, in response to the demand for a simple and reliable revolution counter for turbine installations. In this appliance, the navy standard type of all steel, continuous rotary counter is combined with a telltale pointer which indicates direction of rotation of the propellers and revolutions per minute without the necessity of making calculations. The instrument registers revolutions of the propellers up to 100,000,000 before it repeats. The telltale pointer revolves clockwise when the engine is running ahead and counter-clockwise when reversed. Operation of the revolution counter, it is pointed out, is simple. The telltale pointer is carried on its shaft by a friction clutch, which makes it possible to stop the pointer and reset it to zero. The telltale dial is divided into 100 aparts, each representing one engine revolution. To obtain the revolutions per minute of the engines, the pointer is stopped by grasping the pointer knob and bringing it to zero. Then it is let run for 60 seconds, when it again is stopped. The figure indicated by the pointer at the second stop is the number of revolutions per minute.

The counter telltale is driven through worm gearing from the propeller shaft. The worm and worm gear are enclosed and designed to run in oil to insure satisfactory lubrication. The worm-



COMBINATION REVOLUTION COUNTER AND TELLTALE

gear reduces the speed from the propeller shaft to that of the counter driving shaft 10 to 1. It is pointed out this worm drive feature reduces vibration to a minimum. The company furnishes this equipment complete, including worm gears and guards for all standard sized shafts. This equipment is in use aboard a number of United States shipping board vessels.

Late Marine Patents

Copies of any one of these patents can be obtained by forwarding 25 cents in stamps to Siggers & Siggers, patent attorneys, National Union building, Washington, mentioning MARINE REVIEW.

- 1355156—Electrically propelled boat, Maria R. Lolia, Georgetown, British Guiana.
- 1355267—Protecting apparatus for ships, J. A. Valderrama Ricordi, New York.
- 1355655—Device for lowering of life boats, Jacon de Beer, Rotterdam, Netherlands.
- 1355656—Means for preventing the sinking of ships, Adam Drekollas, Staten Island, N. Y.
- 1355718—Apparatus for the protection of ships against mines and the like, C. V. Osborne, Westminster, London, Eng.

- 1355736—Hydro-aircraft, Glenn H. Curtiss, Buffalo, assignor to Curtiss Aeroplane & Motor Corp., New York.
- 1355894—Torpedo boat, William O. Cutter, East Wareham, Mass.
- 1355937—Nonsinkable boat, John J. Bresman, Worcester, Mass.
- 1356061—Construction of concrete ships, A. A. Gnesini, Middleboro, Mass.
- 1356109—Keel block, Welton H. Nason, Chester, Pa., assignor to Sun Shipbuilding Co., Chester, Pa.
- 1356918—Steering apparatus for freight carrying barges, E. W. S. Nowland, St. Louis, assignor of one-half to Edward Nowland Jr., St. Louis.
- 1356294—Submarine vessel, Joseph Kuhajda, New York.
- 1356778—Submarine working and exploration vessel, Simon Lake, Milford, Conn.
- 1356791—Torpedo boat, William B. Shearer, Montclair, N. J., assignor to International Torpedo Boat Corp., Wilmington, Del.
- 1356956—Reinforced concrete ship, K. Bartels, deceased, Copenhagen, Denmark, to Gudron Bartels, administrator, Copenhagen, Denmark.
- 1356993—Vessel construction, Alexander McDougall, Duluth.
- 1357027—Boat, George F. Brunjes, Brooklyn, N. Y.
- 1357478—Protection of ships in groups or convoys, R. Rau, Geneva, Switzerland.

- 1357509—Ship, R. Ogawa, Tokyo, Japan.
- 1357625—Ship's sidelight or window, David Dundas, Glasgow, Scotland.
- 1357976—Visible guide for vessels, John Hays Hammond Jr., Gloucester, Mass.
- 1358081—Submarine, William P. Kennedy, New York.
- 1358087—Balanced rudder, Alexander McNaught, Manitowoc, Wis.
- 1358359—Cutter for use on towed bodies, Charles D. Burney, Airedorf, Eng.
- 1358360—Towed body, Charles D. Burney, Airedorf, Eng.
- 1358466—Apparatus for use with submarine mines, Jean Ray, Paris, France.
- 1358479—Metal boat, Frank Sweet, Buffalo.
- 1358527—Tripod flying boat, Glenn H. Curtiss, Buffalo, assignor to Curtiss Aeroplane & Motor Corp., New York.
- 1358555—Nonsinkable vessel with conning tower, J. E. Johannessen, J. A. Sether, O. C. Hoff and C. J. Christianson, Brooklyn, N. Y.
- 1358506—Hydroairplane, Max Stuppar, Buffalo, assignor to A. J. Elias, Buffalo.
- 1358640—Ships chair, S. S. Koyama, Moisson, Wash.
- 1358894—Towing device—Jacob C. Swackhamer, Niagara Falls, N. Y.
- 1358951—Pier—Daniel P. Helmick, Chicago.
- 1359059—Construction of ships—Godfrey Harter, London.
- 1359152—Buoyant life-saving fitting and appliance for ships—Patrick Churchill, Manchester, Eng.
- 1359475—Seawall or bulkhead—Rufus B. Willard, Hollywood, Cal.
- 1359513—Submarine power generation—W. C. Leathers, Haworth, N. J., assignor to Submarine Arms Corp., New York.
- 1359763—Sounding apparatus for submarine boats—S. B. Smith, New London, Conn., assignor to Electric Boat Co., New Jersey.

Business News for the Marine Trade

Capitalized at \$10,000, J. V. Petrie & Son, New York, recently were incorporated to engage in shipbuilding, by A. A. Fox, S. V. and J. V. Petrie, 178 Prospect Park West, Brooklyn, N. Y. The Gravesend Shipyard & Machine Co., Brooklyn, N. Y., recently was incorporated to engage in shipbuilding and ship repair work, with a capital stock of \$10,000, by E. J. Green, E. and J. C. Johnson, Thirty-fifth street, Brooklyn, N. Y.

The capital stock of the Duane P. Boat Line, Philadelphia, recently was increased from \$100,000 to \$500,000.

The Truxtun Ship Corp. recently was incorporated in Delaware with a capital stock of \$100,000, by T. L. Croteau, M. A. Bruce and S. E. Dill, Wilmington, Del.

Boats will be operated by the Great Lakes & Atlantic Transit Co., Inc., which was recently chartered

with a capital stock of \$15,000,000, by C. A. Cole, Hackensack, N. J.; R. A. Van Voorhis, Jersey City, N. J., and A. R. Oakley, Pearl River, N. Y.

Wharfage and berthing of steamships will be the business engaged in by the Pacific Ports Service Corp., which recently was incorporated in Delaware with a capital stock of \$100,000, by T. L. Croteau, M. A. Bruce and S. E. Dill, Wilmington, Del.

T. L. Croteau, M. A. Bruce and S. E. Dill, all of Wilmington, Del., were named as the incorporators of the Goodrich Transit Co., which was recently chartered in Delaware with a capital stock of \$1,250,000, to operate vessels, etc.

The authorized capital stock of the Export Steamship Corp., New York, has been increased from \$500,000 to \$1,000,000.

The Mexican Navigation & Machinery Corp., New York, recently was incorporated with a capital

stock of \$5,000,000, by Alexander Wolf, T. Latter and Maurice Deutsche.

Capitalized at \$400,000, the American National Line recently was incorporated to operate vessels, by Charles S. Day Jr., M. L. Jackson and Henry Muller, New York.

Capitalized at \$500,000, the Palestine Commerce & Navigation Co., New York, recently was incorporated by R. Brown, J. Meltzer and A. Dolowitz, 718 Cortelyou road, Brooklyn, N. Y.

The Whipple Ship Corp. recently was incorporated in Delaware with a capital stock of \$100,000, by T. L. Croteau, M. A. Bruce and S. E. Dill.

The Tebo Yacht Basin Co., Brooklyn, N. Y., recently increased its capital stock from \$150,000 to \$1,000,000.

The Beaver Navigation Corp. has been incorporated with a capital stock of \$100,000, by John A. Mc-

Recent Business Changes in the Marine Trade

The Lehigh Valley Transportation Co., which for many years has operated a big fleet of barges between Perth Amboy, N. J., and New England ports, has been taken over by New York interests. Henceforth, it will be known as the Bee Line Transportation Co. Five seagoing tugs and 30 barges were involved in the transfer of vessel holdings.

The Marine Decking & Supply Co. announces the removal of its executive and sales offices from 1011 Chestnut street, Philadelphia, to 116 North Delaware avenue, Philadelphia. The new quarters comprise an entire building which will be used by the company as a sales and storage depot.

The Royal Mail Steam Packet Co., with its affiliated services, the Pacific Steam Navigation Co. and the Nelson line will open its own offices in the spring at 26 Broadway, according to an announce-

ment by Lloyd B. Sanderson, senior partner of Sanderson & Son. Mr. Sanderson will be American director of the Royal Mail and his son, Lloyd B. Sanderson Jr., will be associated with him. The firm of Sanderson & Son will be incorporated and continue, but under the control of the Royal Mail company, with Mr. Sanderson as managing director.

Ellerman's Wilson Line, Ltd., will have its own office in New York, in charge of A. Maclay Pentz, and Edward L. Sanderson, both of whom are identified with the firm of Sanderson & Son, New York.

The Reeve Shipping Co., 42 Broadway, New York, has been appointed American agent for the Universal Shipping & Forwarding Co., Ltd., London.

C. B. Richard & Co., New York, announce their appointment

as agents for the freight and passenger business of steamers sailing from the United States of the Portuguese State Maritime Service. It is reported G. M. Lutz & Co. are to have charge, under them, of business at New Bedford, Mass., where there is a large colony of Portuguese. The Richard company states regular sailings soon will be announced.

Two new partners have been taken into the firm of Norton, Lilly & Co., ship brokers, of New York, in the persons of Edward J. Brandreth and William J. Edwards. Mr. Brandreth, who is widely known in New York shipping circles, has been with the Norton, Lilly organization since his boyhood. Like Messrs. J. T. Lilly and J. B. O'Reilly, he grew up with the business. Mr. Edwards who also has a large acquaintance in eastern ship circles, has been for some time Pacific coast manager of the firm.

Manus, W. C. Payne and R. A. Woodend, New York.

The Gillespie Steamship Corp. has been incorporated with a capital stock of \$250,000, by G. S. Brengle, East Orange, N. J.; Charles F. Quartell, Brooklyn, N. Y., and P. J. R. McEnigart.

The Thomas Line, Inc., New York, has been chartered as a steamship agency, with a capital stock of \$20,000, by G. Painter, H. A. Smith and H. S. Thomas, 163 Eastern Parkway, Brooklyn, N. Y.

Capitalized at \$1,500,000, the Pamlico Transportation Co. recently was incorporated in Delaware to operate boats, etc., by T. L. Croteau, S. E. Dill and A. M. Hooon, Wilmington, Del.

Henn, Vanderberg & Co., New York, ship chandlers, recently were incorporated with a capital stock of \$25,000, by A. Henn, J. Gillespie and E. C. Handler, 553 Glenmore street, Brooklyn, N. Y.

The Delaware River Towing line recently was incorporated in Delaware with a capital stock of \$150,000, by M. M. Lucey, V. P. Lacey and L. S. Dorsey, Wilmington, Del.

The Portuguese line, New York, has been incorporated to engage in general navigation with a capital stock of \$500, by L. W. Simmons, H. P. Pieper and A. E. Fegeltrop.

The capital stock of the Lumen Bearing Co., Buffalo, recently was increased from \$200,000 to \$500,000.

Capitalized at \$5,000,000, the Clarkson Coal & Dock Co. recently was incorporated in Delaware by C. T. Collee, C. B. Outten and S. L. Mackey, Wilmington, Del.

The Maritime Export & Import Co. has been incorporated in Delaware with a capital stock of \$30,000, by M. L. Rogers, L. A. Irwin and W. G. Singer, Wilmington, Del.

The Skinner & Arnold Machine Co., Albany, N. Y., recently was incorporated to engage in the manufacture of engines and boilers, with a capital stock of \$20,000, by G. H. Stevenson, H. Oelise and E. J. O'Connell.

McCabe, Skelton & Bonnell, New York, have been incorporated to engage in business as ship agents, with a capital stock of \$100,000, by G. H. McCabe, W. Skelton and T. T. Bonnell, 55 Liberty street, New York.

The authorized capital stock of the Cowles Shipyard Co., Buffalo, recently was increased from \$5000 to \$30,000.

The Northwest Engineering Co., Green Bay, Wis., which operates a ship construction plant and repair

yard, as well as a foundry and machine shop for the manufacture of marine engines and equipment, recently increased its capital stock from \$1,000,000 to \$1,300,000.

Advices have been received from the Jahucke Dry Dock & Repair Co., Inc., New Orleans, to the effect the damage done to its plant by the recent fire was slight and in no way approached the damage said to have been done. The entire repair plant, including machine and plate shops, boiler, tin and joiner shops, which are in fireproof buildings, were not touched by the flames. Part of the wharf was destroyed and the two dry docks were damaged, but the business of the company was not interrupted. On Christmas day the company docked one of the largest oil tankers entering the harbor of New Orleans, and it now is making repairs to 12 other vessels. It is hoped within a few months to have the wharf rebuilt and the dry docks repaired. The company in addition advises that at the National Marine Exhibition in New York, Jan. 24, it will have an exhibit of its plant as it is today and what is being done.

Word has been received from the Brewer Dry Dock Co., Staten Island, N. Y., to the effect that, although it recently was granted permission to enlarge its capital stock, this does not mean it is contemplating at this time erection of plant additions, or the enlarging of its facilities in any way.

Conveying machinery, hoisting and loading equipment will be installed by the National Export & Import Co., Iberville and Front streets, New Orleans, in connection with expansions and improvements to its 7-story building. F. J. Gruenthal is vice president of the company.

The M. S. T. Shipbuilding Co., Tarpon Springs, Fla., has purchased waterfront property for the establishment of a shipbuilding and repair plant, primarily for vessels of light draft.

The Kahlenberg Bros. Co., Two Rivers, Wis., manufacturer of marine engines, etc., recently increased its capital stock from \$75,000 to \$300,000.

The Schaeffer & Buendberg Mfg. Co., 84 Broadway, New York, manufacturer of steam gages and other equipment, with plant at 33 Berry street, New York, recently increased its capital stock from \$100,000 to \$1,000,000.

The Boston Chain Co., Boston, recently was incorporated with a capital stock of \$20,000, by Frank Klein, S. J. Gordon and Jacob Fishman, Chelsea, Mass.

Capitalized at \$125,000, the Standard Welding

Co., Jersey City, N. J., recently was incorporated by Henry M. Schriefer, M. H. Schriefer and Albert C. Schriefer.

The Kingston Dry Dock & Construction Co., Kingston, N. Y., has been incorporated with an active capital stock of \$525,000, by E. Salisbury, G. A. Fagan and M. E. McGuiness, to operate a ship construction and repair plant.

The Generator Valve Co., 47 Dinsmore place, Brooklyn, N. Y., recently increased its capital stock to \$40,000.

The National Electric Tool Co., Pittsburgh, is being organized by John A. Metz, T. D. Murray and S. E. Wentley, to engage in the manufacture of electrical tools and appliances. Application for a charter will be made soon, by John A. Metz, 507 B. F. Jones building.

Considerable machinery, including electrically operated hoisting and conveying apparatus, yard cranes, etc., will be installed by the Fulton Lumber Terminal Co., Jersey City, N. J., at its new plant on the Hackensack river. The company was recently organized with a capital stock of \$1,000,000, by B. F. Fitch, president of the Motor Terminals Co., 61 Broadway, New York, and others.

New Trade Publications

FEED WATER HEATERS—An interesting booklet descriptive of its feed water heaters has been issued by the Ross Heater Mfg. Co., Buffalo. It is an exceptionally comprehensive book of its kind and goes into detail in describing heaters, condensers, expansion joints, coolers and air injector pumps, which the company manufactures.

These heaters are of the closed or tubular type and the booklet describes their use, not only for heating water, but for oils and other liquids as well. Tables of useful calculations regarding fuel water heaters is a part of the book. This catalog F explains in detail the workings of the Ross expansion joint, which is made on the crosshead guide principle.

HOISTS—Until having seen the new catalog of the Wright Mfg. Co., Lisbon, O., it is doubtful if many would realize the great variety of hand hoists made and the surprising number of uses to which they may be put. Among these are on board ship, both in the engine and fire rooms and for handling cargo in the holds. A number of installations of these quick handling rigs on board ship are shown.